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CANADA MEDICAL RECORD

APRIL, 1897.

Original Communications.

VALEDICTORY ADDRESS.

Delivered at the Medical Convocation, University of Bishop's College,
March, 1897, by Prof. W. H. DRUMMOND. M.D.

MR. CHANCELLOR, VICE-CHANCELLOR, PRINCIPAL, GRADUATES,
LADIES AND GENTLEMEN.

In accordance with time-honored custom, I am called upon to address a few remarks to the Graduating Class of 1897. On an occasion like this, when we are honored by the presence of many ladies and also of gentlemen unconnected with the medical profession, it would be unseasonable and inappropriate to occupy the time with scientific technicalities, or anything else but common sense generalities, suitable to the events of the day, and thoroughly intelligible to every one. To-day you have attained the prize for which you have been striving hard for a long course of four years, during which you have shown, by your diligence in study and punctual attendance at the lectures of the various teachers, that you have fully earned the distinguished honor for which you have been toiling. You now go forth to pursue your medical career, and your diplomas testify to the fact that you are to a *certain* extent well equipped for the battle of life, in which you will necessarily be called upon to baffle many a form of disease, and procrastinate in all possible instances the unwelcome hour of death.

But although your college training and apprenticeship is at an end, do not for *one* moment permit yourselves to think that your education is *finished*. Your novitiate alone is past, the foundations have been laid, but the *edifice*, which literally means the building up of your professional career, has yet to be reared. You must always remember, to quote the words of Lord Palmerston: "Education is the art which teaches men how to live. The education of a sensible and intelligent man continues to the latest day of his existence,

for there is no day of a man's life, there is no period of his activity, in which if his mind is alive, if he keeps his ears and eyes open to impressions and observations, he will not continually be adding to the stock of his ideas and of his thoughts, and in which he will not add to the store of his knowledge, and increase the amount of his information."

The science of the Medical art in all its branches is ever progressive, and rapidly expanding, particularly in our own time. To keep thoroughly abreast of the professional literature which is constantly pouring forth from the press will tax all your energies, and even draw heavily upon your finances; but you will be rewarded by the feeling that your labors and expenses are bestowed on a laudable object, namely, a desire to win success in the path of life that you have chosen, accompanied by the ability which you will exercise of alleviating the sufferings of humanity, and winning the respect and gratitude of your less scientific clients. At the same time it may not be amiss to warn you all against displaying on any occasion an affectation of *knowledge*, inscrutable to all except the adepts of Medical science, an air of perfect confidence in your own skill and abilities, or a demeanor too highly expressive of self-sufficiency. Such conduct cannot escape the censure of the more judicious or elude the ridicule of men of wit. Dr. Pillgarlic has often been humorously exhibited on the stage, but the satire is really directed against the habits and notions of *individuals*, and not against *genuine* medical science.

The practice of the healing art affords a vast field for the exercise of humanity. To a benevolent man this must be one of the greatest pleasures. Physicians and surgeons have many opportunities of displaying patience, compassion, generosity, and all the gentler virtues that do honor to human nature. A man endowed with these qualities diffuses consolation and comfort; he employs his talents, his time, and *occasionally* his *purse*, in relieving misery; and with a pride which I will not attempt to disguise I may be allowed to add that no other class of citizens perform their duty with as much zeal and courage as the members of the "Essential Profession." If fortunately a young man possesses positive medical *genius*, he nevertheless needs talents of an entirely different kind; he not only has the improvement of his own mind to attend to as his career develops, but he must study the temper, and struggle with the occasional prejudices of his patients and of the world in general. A physician must therefore have a large share of common sense and knowledge of the world, as well as medical skill and learning, or he will never become what that world designates as a *successful practitioner*.

The *moral* qualities peculiarly required in the character of a medical man may be briefly referred to, and the chief of course is *humanity*, or that sensibility of heart which makes us feel for the physical or mental distresses of our fellow-creatures, and powerfully incites us to relieve them. The *true* physician must possess what Shakespeare terms the "milk of human kindness," and must give evidence of this in the gentleness of his manners when dealing with his patients. The insinuation that a feeling heart is commonly associated with a weak understanding and a feeble mind is a libel on humanity.

On the contrary, a rough, blustering manner often accompanies a mean soul and a weak understanding, and indeed is sometimes affected to conceal natural defects. Gentlemen, we are all aware of the solemn nature of an oath, and of our obligation to keep it when taken, and with all our heart, soul, and strength. Your main duties are comprised in the vow to which you have pledged yourselves to-day, the substance of which was proposed by Hippocrates 2000 years ago. You have then pledged yourself on this important day to practise physic, "Caute, Caste, Probe,"—that is to say, cautiously, chastely, and honorably; and if I offer you a few observations upon these three points, you will perhaps not think that I have taken up your time and attention uselessly, or without a desire to throw some light on words which have only been recently introduced to your special notice. What then, may I ask, are we to understand by the word "Caute"? One meaning of "caution" in practice is carefulness not to expose the sick to any unnecessary danger. The best rule of conduct on this point is the comprehensive precept, "Do unto others as you would they should do to you." Whatever a practitioner would do in his own case, or in the case of those nearest and dearest to him, he should do for the good of his humblest patient. Let the result be whatever God may permit, the physician has the greatest of all consolations, the "*Mens conscia recti*," the consciousness of rectitude, and this must be his solace, when the vulgar, the ignorant, the envious, the malicious, and others interested in the case, perhaps blame him unfairly for the death of his patient. These answers would be merited if he heartlessly said to himself "*Fiat experimentum in corpore vite*," and administered some dangerous drug, or performed a needless surgical operation, merely to gratify his own curiosity or zeal in the cause of science. Such conduct would convict him in the minds of all reasonable and feeling persons of a breach of medical ethics and of a high misdemeanor. The phrase "*Corio humano ludere*," literally to play with the human hide, shows in what light the Medical Faculty regard such conduct; and as there is always much inevitable danger in the practice of

physic, the important duty of caution in a physician cannot too strongly be emphasized. Whatever he thinks is best for his patient, it is the indispensable duty of a medical man to do; but in discharging this duty the word "Caute" must always be before his eyes. Another duty imposed upon the profession may here be appropriately mentioned—it is discretion, or secresy. Unlimited confidence is often reposed in a medical man, revelations are at times made to him which honor forbids him to publish or divulge in any way, excepting when compelled to do so by what is termed the strong arm of the law. "Non sine gravi causa" is the wording of the Edinburgh oath, which our own University has adopted, probably with reference to the interference of the law. Medical men have occasionally been reproached with hardness of heart, occasioned, as is supposed, by their being so frequently brought in contact with human suffering. I sincerely hope, I may say I firmly believe, that the charge is unjust, for habit may beget a command of the emotions and a seeming composure, which is often mistaken for absolute insensibility. When this insensibility is unfortunately real it is a misfortune for a physician or surgeon, as it deprives him of one of the most natural and powerful incitements to exert himself for the relief of his patient. On the other hand, a practitioner of too much sensibility may be rendered incapable of doing his duty perfectly from anxiety and excess of sympathy. These may at times cloud his understanding, depress his mind, and prevent him from acting with that steadiness and vigor upon which in a measure the life of his patient depends.

That you will not attain the professional success you desire without struggling against hosts of difficulties, and even encountering opposition, is most certain. The iron grasp of poverty for a considerable time may impede your progress and feeble your efforts. But it is the triumph of genius and talent to rise in proportion to the magnitude of difficulties, to trample down the opposition of malignant mediocrity, and while gaining its own merited elevation, to raise the profession he has chosen to a corresponding degree of affluence and prosperity. It has often been observed that these medical men who have not a laudable ambition to rise to eminence, by those talents, and honorable conduct, seldom if ever become renowned, may remain every-day characters, and never obtain the highest places in the profession. When a thirst for gold (*auri sacra fames*) is the only object of professional reputation it leads to mean and even unprofessional tactics, which should always be avoided, no matter how much money there may be in it.

In your intercourse with brother physicians, be careful to observe and carry out faithfully every detail of professional etiquette.

Remember that even physicians are not infallible, that they have their failures as well as their triumphs ; and whenever you may succeed where others have failed, be modest, and do not boast of your success, for you never know when your own turn may come to be corrected in diagnosis by another. And bear in mind that "Whatsoever a man shall sow, that shall he also reap." In a word,—be gentlemen, and then you will always be ethical.

And now the farewell hour has come. No more will the bell of the faithful janitor summon the straggling and boisterous battalions to the lecture room. Many of you will doubtless have made friendships which shall endure as long as life itself ; but, in the majority of cases, these friendships will become memories, for, scattered broadcast over the land, in village, town and city, most of you, perchance, will never meet upon earth again.

Forty years from now, if you are still living, pictures of the old classmates will smile down upon you from the neighboring mantelpiece, to remind you of departed days gone, never to return.

All of these College comrades will have grown older, and some may have passed away from God's green footstool ; but to you they will be always living, ever youthful and vigorous, as you knew them in the dear days gone by. Do nothing that will make the features of the old comrades blush instead of smile. Farewell !

VALEDICTORY ADDRESS FOR THE CLASS OF '97—APRIL 7, 1897.

By C. A. Fortin, M.D.

Mr. Chancellor, Members of the Medical Faculty, Ladies and Gentlemen,

To be allowed the privilege of voicing the feelings of affection and of regret of the Class of 1897 on the day of Convocation is indeed a pleasure never to be forgotten.

This afternoon I will endeavor to convey to our Professors and Lecturers and all those connected with our college course, the most kindly feelings of gratitude and thanksgiving ;—gratitude for their ever watchful care over us in our various branches of study ; thanksgiving for having vouchsafed to allow us to get beyond the pale of the examination room intact, and without any irregularities in our legendary plumage.

To be associated with such an esteemed assemblage of men as the Faculty of Bishop's for a period of four years without begetting a certain amount of affection for them would be rather a bad slur either upon the Class of 1897 or upon the Faculty.

As a matter of fact, however, the members of the Class of 1897 feel proud of their University, proud of their Professors, which

augurs more for the popularity of the various teachers than if I had spoken for hours on the relative value of each and every man connected with the Faculty of Medicine.

The members of the Class of 1897 in the fall of 1893 had the choice of medical schools open to them.

We chose Bishop's, for a still small voice whispered that she had many practical advantages.

I can safely say that no member of our Class has ever yet regretted having entered Bishop's Medical Faculty. From the very day of our entrance into college we have been under the immediate supervision of the Faculty, and I am sure that nowhere in the Dominion will you find a Faculty with the welfare of the students more at heart than in Bishop's.

Unfortunately this fact is not taken advantage of enough by the student. The first two years in college for a student is one continual round of pleasure.

Loosed from the strings which have no doubt hitherto bound him, or awed by his initiation into such a vastly scientific study, he regales himself with the pleasures of life. Such days are now past however. Tales have been handed down to us from our noble predecessors of gay times spent during their course of study. With all due respect to these gentlemen, I must say that they could not have been troubled with as lengthy and severe a curriculum as we have had to plow through. The day for the rollicking, devil-may-care medical student has passed, and now he must be a veritable bookworm, or the presence of his name on the pass list will be rendered conspicuous by its absence.

I am glad to see that the public at large is beginning to recognize this fact, and that the medical student is no longer an outlaw from society. I can assure you, ladies and gentlemen, that if the actions of students of other Faculties were looked into more carefully, the ban of ostracism could be more safely placed upon them than on the inoffensive Medico. Since 1893 we have noticed with pleasure many changes in Bishop's. With the advancing tide of the great Medical science, Bishop's is also advancing. She sees the necessity of adding new subjects to her curriculum, and without much compunction she does so.

Much to our horror ! we have seen two new subjects loom up before our eyes, and to our already much inflated cranium their massiveness seemed gigantic. We have succeeded in struggling through them, and now we can rest upon our oars and smile patronizingly upon our successors, and condescendingly say : " Oh ! they are easy."

What confidence is inspired by the thought that the battle is

over. Had we been interviewed before the eventful day of examination we might perchance have shrieked aloud in the agony of our despair, "Alas ! Alas ! I am undone."

One of the most important changes has been the affiliation of the dental college with Bishop's Medical Faculty. I am sure that the members of the Medical class of 1897 are proud that they received their degrees at the same time and place as their dental confrères, the first students to receive the degree of D.D.S. since the affiliation. Surely this is a red letter day for our Alma Mater, when she demonstrates to the public that she not only strives to educate medical men, but also to elevate the standard of dentistry from being a mere trade to a profession.

Within the last few years the students of Bishop's have been treated to quite a new innovation. Students who hitherto have enjoyed a blissful rest during their first and third years suddenly awoke to the fact that they must "be up and doing." This stirring up was due to the introduction of sessional examinations. By this it is meant that students in their first year will pass examinations in the primary subjects, and third year students will pass examinations in final subjects, so that the Faculty may be assured that they are not loafing away their time until the final examination.

It cannot be denied that this is a most worthy undertaking, although as yet the full usefulness of the same has not dawned upon the student, nor has the "modus operandi" been clearly outlined, consequently much dissatisfaction has been expressed by the students.

We hope, however, that the Faculty will deal leniently with those who cannot grasp the situation properly, and that a clear understanding between the Faculty and the students will be forthcoming.

When a student has graduated it is easy enough to see the efficacy of these examinations, but it is much more difficult to persuade a student before graduation that additional examinations will benefit him in any manner, shape or form.

We have seen many changes in the College building. Taking advantage of the limited means at her disposal, the plucky, self-supporting Medical Faculty of Bishop's University seeks to fit herself to battle with the grander universities, which, although rolling in wealth, constantly grab everything within reach.

How well does she succeed?

The success of her various graduates will answer that question.

If some noble benefactor would lavish some of his goodnesses upon this worthy institution, rather than "carry coals to Newcastle," it would be a far more noble deed of kindness.

Competition is the spice of life, when that competition is equal ;

but when a great handicap has to be contended with, it becomes a rather laborious duty.

Year by year the course in Bishop's is becoming more practical. The aim of the Faculty is to familiarize the embryonic M.D's. with their future life, rather than leave them to commit the inevitable breaches of Medical ethics, which will invariably follow when launched into private practice after a purely theoretical course. I doubt if there is a college in Canada,—indeed I may say in America—where the course is rendered more practical, and I can assure you, gentlemen, we appreciate this fact.

There are points, however, which might be improved upon, and if I could whisper into the ears of the Faculty, I would say, that the lectures are too much scattered over the day, necessitating too frequent journeyings to the College building, often at the sacrifice of hospital work. This little fault should certainly be remedied, so that our successors may get their full money's worth out of the Montreal General Hospital,—a truly grand institution, but rather too much controlled by individuals who display too great an amount of partiality.

We have, however, fortunately the privilege of attending two hospitals where partiality is alone extended towards ourselves, simply because we are the only ones to receive it. I refer to the Western Hospital, the Women's Hospital, and I might add the Hotel Dieu (the latter we share conjointly with Laval University).

The former hospital gives us the advantage of perfecting ourselves in Gynæcology, and at the same time we can witness many interesting cases in Medicine and Surgery. For its size, more good work is being done by the Western Hospital than any other of the many hospitals in Montreal.

The inhabitants of the western portion of the city are beginning to recognize the advantage of having a hospital in their vicinity, and are giving their support more readily.

It is to be hoped that they will spur themselves on to renewed vigor, and soon erect additional wings to the Western. The rapid growth of the city in that direction, together with the proximity of the various manufactories, certainly warrant the immediate enlargement of the hospital.

At the Women's Hospital a grand work is being done. Under the immediate supervision of our popular professor of Obstetrics, the students of Bishop's receive in this hospital instruction and practice second to none on the entire continent of America. The position of resident house surgeon is open to students of the Final Year, and those who have been fortunate enough to obtain the appointment have gained experience in that branch invaluable to them in their future practice.

On the teaching staff of the College there are and have been men who are second to none in their particular branches. Unfortunately we have seen men, who, having been nurtured, so to speak, by the Medical Faculty of Bishop's severed their connection with their foster mother to accept the tempting offers of our more wealthy adversaries.

We are glad to say, however, that we have also seen some of our professors refuse as tempting offers, from those who in their unknown days ignored them, but who were ready and anxious to receive them after they had been under the guidance of Bishop's for a few years.

We are proud of these men, whose principle is of more moment to them than the enticing bait of worldly goods. They will receive their reward for fidelity, for the day is fast coming and will soon be here, when Bishop's Medical Faculty will be known far and wide.

Nothing succeeds like success, so we will hope that as Bishop's success becomes known, some as yet unknown benefactor will open his coffers, and bestow upon this brave Institution his blessing, accompanied by a goodly cheque.

Strangely enough, our noted philanthropists seem loth to bestow their money upon medical schools.

Can you imagine, Ladies and Gentlemen, a more noble cause to assist than the training of medical men ?

Show me a profession where there is more self-sacrifice, more hardships to endure, more good to be done (and less money to be collected) than in the medical profession.

The lawyer pleads his cases in a court of law, and attends to his office duties, with careful attention to his meal hours and hours of rest.

The scientist attends to his laboratory, which is carefully heated and protected from the inclemency of the weather. The theologian pays his duty calls at convenient (and sometimes inconvenient) hours, and casually prepares his sermons for the following Sunday, and in fact in a great majority of cases they spend their days in blissful peace.

To the medical man is left the exposure, the loss of sleep, the irregularity of meals, the anxiety of difficult cases, on the issue of which oftentimes depends a human life.

To the doctor is left oftentimes the settlement of many an intricate family affair, which all the clergymen in Christendom could not begin to set straight.

He can with a little diplomacy nip in the bud many a fierce quarrel, and soothe the minds of the most suspicious individual.

He comes as a light to the sick-room, and gives peace to a

troubled mind, whereas often the presence of a minister will give your patient the horror of impending death.

The public at large have until a very recent date looked down upon Medico's, and have treated them like strange men from a strange land ; but happily the much needed reformation is now at hand, and soon the wave of benefaction will roll in the direction of medicine.

Now that the time has come for us to bid adieu to our professors, our classmates and our many friends in Montreal, our hearts are indeed full. There will ever be treasured up in our minds pleasant reminiscences of our happy college days at Bishop's. The pleasant associations formed and the warm interest manifested in our welfare will cause us to exclaim " Came I ever a stranger here ? "

Indeed in the new life which is opening for us, we will ever look for news of the advancement of Bishop's, and try in our different locations to advance the interests of our beloved Alma Mater.

To our Professors, let me thank them on behalf of my classmates, for their indulgence, and allow me to say that we heartily appreciate their kind, patient and painstaking instruction, and we hope that our actions in our future will be such as will reflect credit upon them, upon ourselves, and upon our Alma Mater.

If, perchance, fate should will that some of us attain the honor of becoming ourselves teachers in medicine, we will endeavor to follow in their well set example.

To our many friends we extend our hearty thanks for many kindnesses shown, and hope that they will never regret ever having extended the hand of friendship to one of the Class of '97.

To our fellow-students we wish all success for your future, and trust that you will follow on in the steps of your senior men of '96-'97, and keep up the honor and reputation of Bishop's Medical Faculty. Apply yourselves unto study and you will acquire wisdom.

To one and all we bid a most reluctant adieu.

Progress of Medical Science.

MEDICINE AND NEUROLOGY.

IN CHARGE OF

J. BRADFORD McCONNELL, M.D.

Associate Professor of Medicine and Neurology University of Bishop's College;
Physician Western Hospital.

THE DIAGNOSTIC VALUE OF BLOOD EXAMINATIONS.

This is the title of a paper appearing in the *American Medico-Surgical Bulletin*, Feb., 1897, by Thomas P. Prout, M. D., pathologist and assistant-physician to the New Jersey State Hospital at Morris Plains. It covers the ground of this interesting subject so well that its reproduction here in full will prove instructive.

Perhaps in no department of medicine has there been greater activity with more splendid results than has been manifest in the science of hematology during the past three years. I daresay could any one of us have been assured of the real possibilities in this line of work five years ago, he would have been inclined to accuse his informant of taking a very utopian view of things, if he did not really put the stamp of "lunatic" upon him.

Beginning with the time about ten years ago, when the apparatus of Gower's first came into general use for making blood counts in the different forms of anæmia, there has been manifest a steady advancement, till at the present time not only anæmia, but a host of affections, the early diagnosis of which is often obscure, have at last bowed to science, and assumed an attitude becoming to things known, or at least knowable.

Since the laying of the broad foundations of this work by Ehrlich some years ago, a firm structure has gradually been builded, which I venture to say already exceeds the most sanguine hopes of its most enthusiastic projectors. The work of Ehrlich and his followers has enriched us with facts, which prove that conditions arise in the blood which are not only aids in diagnosis, but actually pathognomonic of certain diseases. No one will deny that in differentiating between a number of diseased conditions presenting a similar symptomatology, any single fact which eliminates any one of them is of vast importance, and any group of facts which establishes the correct diagnosis beyond question is of still greater import.

The facts presented by a carefully conducted blood examination have now become of sufficient importance that they cannot well be disregarded in any condition at all obscure. Let me present one or two examples :

A man of a dull, apathetic state of mind gradually began to show signs of illness. For several days he showed general malaise ; took his meals very poorly, and was at last put to bed. A general physical examination at this time was entirely negative ; there was no diarrhœa, nausea, or vomiting, and the patient seemed to suffer no particular discomfort. There was, however, regularly an evening rise of temperature amounting to a degree or a degree and a half. A blood examination was made in the hope of finding the malarial organism, as the patient had suffered from a slight chill on one occasion. It was, however, not found, but the nature of the general and differential blood count was such that a diagnosis of some form of latent tuberculosis was suggested. Five months passed with no apparent change in the patient's general condition. The evening temperature continued, sometimes higher, sometimes lower, but always present. The suspected disease appeared at least in the form of tubercular disease of the os calcis, about five and a half months after its latent presence had been suggested.

A woman about fifty-five years of age, who had been previously healthy, gradually began to show signs of failing health. A little later, persistent vomiting of a greenish, watery material manifested itself, and an irregularity of the bowels, which, together with the general appearance of the patient, suggested the existence of malignant disease of the stomach. Her downward progress was gradual, but persistent. Milk, well peptonized, became the only food she could retain. This, together with the existence of more or less persistent pain in the abdomen, and the general appearance of the patient, were considered quite conclusive evidence of the existence of malignant disease, notwithstanding the fact that no tumor could be felt in the abdomen. A blood examination was resorted to for the purpose of substantiating this diagnosis. The conditions found in the blood, however, were of such a nature that it could be unhesitatingly affirmed that cancer did not exist, and further, the blood state was such that a diagnosis of pernicious anæmia was substituted. Some months afterward the patient died, and this diagnosis was confirmed at the autopsy.

In another instance, a diagnosis of malignant disease of the liver was confirmed by a blood examination, and this diagnosis was also substantiated by subsequent autopsy and microscopical examination of the tumor.

The advancement in our knowledge of hematology during

the past five years has necessitated the addition to our vocabulary of something between fifty and sixty words, all of which refer to the number, size, shape, staining proclivities, etc., of the red and white blood cells. Thus leucocytosis refers to an increase, and leucopenia to a diminution in the relative number of leucocytes. Erythrocyte is another term given the red blood cell, and refers to its natural color, in the same manner that leucocyte refers to the natural color of the white cell. By their size the erythrocytes are known as macrocytes, megalocytes, and microcytes; by their shape, round cells and poikilocytes; by their staining qualities the leucocytes are known as acidophiles, basophiles, neutrophiles, eosinophiles, etc.; while their supposed origin is expressed in the terms lymphocyte, splenocyte, myelocyte, etc. These are the more common terms in general use.

The normal number of red cells is generally placed at about 5,000,000 per c.mm., and the normal number of white cells at from 7000 to 10,000 per c.mm. Any increase in the proportion of leucocytes above 1 to 500 red cells therefore constitutes a leucocytosis.

The existence or non-existence of a leucocytosis becomes of diagnostic value when those acute diseases are considered in which no leucocytosis ever normally exists. Tuberculosis is one of these diseases. It was by means of this fact that Limbeck was able to diagnose a tubercular meningitis from the suppurative form, and his diagnosis was confirmed by autopsy; and this fact is now also utilized to differentiate typhoid fever, in which no leucocytosis ever normally occurs, from a host of acute affections in which a leucocytosis is the rule. Such are, for instance, peritonitis, pyosalpinx, pelvic abscess, appendicitis, etc., all of which present a well-marked leucocytosis. I may add that its absence in suspected appendicitis should make one hesitate about operating.

In typhoid fever, the number of leucocytes may sometimes fall below normal (leucopenia). This is especially the case in the late stages of the disease. The absence of a leucocytosis, or an actual leucopenia, becomes of great diagnostic significance when we consider the fact that, besides tuberculosis and typhoid fever, there are only two other acute affections in which this condition of the blood normally occurs, viz., malaria and measles.

Ehrlich was the first to define the different forms of the leucocyte. He divided them into five principal varieties, depending somewhat on their staining reaction and supposed origin. The stains used were a slightly acid stain (orange), a markedly acid stain (acid fuchsin), and a basic stain (methyl-green), all of which were combined in proper proportion in a single mixture. The leucocytes were classified by Ehrlich

into lymphocytes, large mononuclear cells, transitional cells, polynuclear neutrophiles, and eosinophiles.

The lymphocytes are small and rounded, and in size a little larger than a red blood cell. The nucleus is large in proportion to the size of the cell, and is surrounded by a mere rim of protoplasm. Many of these are neutrophiles in the sense that their protoplasm stains with a combination of both acid and basic stains. In other instances the protoplasm remains practically unstained. The normal percentage of this form of leucocyte is about 24.

A typical large mononuclear cell presents a nucleus which has taken the basic (nuclear) stain but slightly, the cellular protoplasm remaining practically unstained, or but slightly tinged with the basic stain. These cells are, therefore, some of them basophiles, and their normal number is about 6 per cent.

In the transitional cell, the nucleus shows the same staining proclivities as in the preceding; but in addition, there is a tendency to divide and subdivide, as seen in the multinuclear cell. The protoplasm also shows a few granules which faintly take a combination of acid and basic stains. It would therefore seem that these are truly transitional cells—cells in a transitional stage between the large mononuclear cell, on the one hand, and the polynuclear neutrophile, next to be described, on the other. Their normal percentage is about 3.

The polynuclear neutrophile, or multinuclear leucocyte, is a large round cell containing two or more deeply stained nuclei, the cellular protoplasm at the same time showing granules tinged with a combination of acid and basic stains. These, therefore, are neutrophiles, and their normal percentage is about 65.

The eosinophiles are generally multinuclear cells, the protoplasm of which contains granules which take the acid stain only. They are also sometimes called acidophiles, and were named eosinophiles by Ehrlich on account of their marked tendency to take up eosin.

A differential count of the leucocytes consists in identifying the stained leucocyte in a dried film of blood and placing it in its proper column. This gives us the percentage of the different forms of leucocytes, and, to recapitulate, they are :

	Per cent.
Lymphocytes about.....	24
Large mononuclear cells about.....	6
Transitional cells about.....	3
Polynuclear neutrophiles about.....	65
Eosinophiles about.....	2

Normal blood may present a variation of 2 to 4 per cent. from these figures.

How does the differential count of leucocytes become of

value in differential diagnosis? For the sake of illustration, let us suppose that we are confronted by two cases, A and B, both apparently very seriously ill, both anæmic, both cachectic, both emaciated, but suffering from diseased conditions referable to different organs of the body.

A specimen of A's blood, stained in the usual way, shows, in addition to an increase in the number of leucocytes (leucocytosis), a poikilocytosis and megal- and microcythemia, and a few nucleated erythrocytes. B's blood presents the same appearances to a more marked degree, except that there is no leucocytosis. The differential count of the leucocytes in the two cases will stand as follows* :

	A's Blood Per cent.	B's Blood Per cent.
Lymphocytes.....	5.8	54
Large mononuclear and transitional leucocytes.....	4.8	6
Polynuclear neutrophiles.....	89.4	39
Eosinophiles.....	0.0	1

When we take into consideration the primary findings in the blood, A's count is typical of malignant disease of the internal organs, B's is typical of pernicious anæmia. Both, it will be noted, vary widely. The condition of the blood in this form of malignant disease has also been successfully used in differentiating between cancer of the œsophagus and aneurism of the arch of the aorta. It can easily be seen how this is a point of great importance, when it is considered how possible it is to have the two conditions almost exactly simulated as regards their subjective and objective symptomatology. The blood, however, presents a practically normal state in aneurism, while in cancer, as we have already seen, changes of an unmistakable character are manifest.

Let us suppose another case, C, a case of tuberculosis, presenting, possibly, very much the same appearances as the two former cases. An examination of the blood, however, presents an entirely new picture. In addition to there being no apparent anæmia, there is no leucocytosis, no poikilocytosis, or macro-, or microcythemia. Further, there are no nucleated red blood cells. When we come to the differential count, we find, again, a very decided variation from either the normal standard or the two previous blood counts.

	C's Blood Per cent.
Lymphocytes.....	12.7
Large mononuclear and transitional leucocytes.....	8.8
Polynuclear neutrophiles.....	78.0
Eosinophiles.....	0.5

It will be noted that the lymphocytes, instead of being at the normal point, are very much diminished, and the mul-

tinuclear cells are correspondingly increased. This, together with the other facts, gives us some conditions quite characteristic of tuberculosis. The absence of nucleated red blood cells in tuberculosis distinguishes it also from a number of other affections in which the presence of this cell is a notable fact. Such, for example, are leukemia, pseudoleukemia, phosphorous poisoning, and the anæmia of tertiary syphilis, in all of which the nucleated red blood cell is present, as well as in the cachexia accompanying cancer of the internal organs and pernicious anæmia.

The blood count in pulmonary tuberculosis distinguishes it in an unmistakable manner from another disease of the lungs, croupous pneumonia. As distinguished from the blood count in pulmonary tuberculosis, pneumonia presents a very high leucocytosis. In fact, this condition is so constant that its absence, or a very slight leucocytosis, has been found to be associated only with the more serious forms of the disease. This is the case to such an extent that the existence of a very slight leucocytosis has come to warrant a very guarded prognosis, and its absence indicates the existence of a very grave condition, almost invariably fatal. On the contrary, the existence of a high leucocytosis augurs favorably. This is, in fact, the class of cases in pneumonia that usually recover. Then, again, the differential count in these two diseases is entirely different. The leucocytosis in pneumonia involves the polynuclear neutrophile cells, so that we have a great increase in the relative number of these cells, and a corresponding diminution in the lymphocytes. A differential blood count in pneumonia would therefore appear as follows:

	Per cent.
Lymphocytes.....	4
Large mononuclear and transitional leucocytes.....	6
Polynuclear neutrophiles.....	88
Eosinophiles.....	2

It will also be noted that in this instance the eosinophiles are normal in number, whereas in pulmonary tuberculosis they are quite frequently diminished. This last fact serves also to distinguish tuberculosis from those diseased conditions in which there is a positive increase in the eosinophiles, viz., Graves' disease, leukemia, nephritis, chronic malaria, and asthma.

In conclusion, I wish to say that I realize fully that I have failed to cover the whole field of this subject, and I have no doubt you will all point with one accord to the malarial organism, the presence of which is alone demonstrated by a blood examination, and remind me of a very serious omission. It was my purpose, however, in this paper to present some of

the newer aspects of hematology, leaving out of account those blood states which are still matters of theory. As a discussion of the malarial organism involves so much that is mere theory, I have omitted its consideration entirely.

If, in thus touching upon the borderland of a field, the horizon of which is growing brighter, and the scope of which is daily broadening and assuming more and more the aspect of a true science, I have demonstrated a few points indicative of the general direction in which we seem to be tending, I shall feel amply repaid.

A RESEARCH UPON ANAESTHESIA.

In the March number of the *Journal of Experimental Medicine*, Drs. H. C. Wood and Wm. S. Carter describe experiments, the object of which was: 1st. To ascertain what effect has lessened blood supply to the brain upon the respiration and upon the vaso-motor system. The animals experimented on were anæsthetized, and the carotids and vertebral arteries secured by ligatures or clips, and the blood supply could then be changed at will. An important observation was the rapidity with which the collateral circulation is established after tying the neck arteries. 2nd. Does the circulation recover itself more rapidly after prolonged deep etherization, than after a similar narcosis produced by chloroform? 3rd. Is it possible to have death produced by an anæsthetic some time after the cessation of its administration and the return of consciousness?

CONCLUSIONS.

The conclusions which have been reached by the series of experiments recorded in this memoir are:

First. Lowered arterial pressure has a comparatively feeble effect upon the respiration, but when the pressure falls sufficiently, respiratory depression does occur.

Second. Even excessive lowering of blood pressure primarily stimulates the vaso-motor centre, the sensibility of the centre being evidently necessary to the automatic regulation of the circulation.

Third. The circulation recovers itself more slowly after profound etherization than after a like chloroform narcosis.

Fourth. It is possible for ether as well as chloroform to produce death some hours after the cessation of its administration, at a time when the cerebrum has long freed itself from distinct evidences of the narcotic, so that consciousness and intellectual action have been restored.

In applying these conclusions to the subject of practical anæsthesia it is evident that the depression of the circulation produced by chloroform has effect upon the respiratory

centres only when the pressure has fallen very low ; and whilst it may be a factor in the production of respiratory failure during chloroformization, the failure must be chiefly due to the direct influence exercised by the drug upon the respiratory centres.

Clinical experience shows that nausea and general depression are more pronounced after the use of ether than after the use of chloroform, a difference which is strongly insisted upon by the advocates of chloroform as an important agent in favor of that anæsthetic. Our research confirms clinical observation, and experimentally shows that the depression of the circulation produced by ether is more permanent than that caused by chloroform ; the reason probably being the large amount of ether which is necessary to produce profound narcosis, with lowering of the arterial pressure ; an amount so large that it can neither be burned up in the system nor yet eliminated in the time which would be necessary for the much smaller amount of chloroform to be gotten rid of after chloroformization.

BIANCHI'S PHONENDOSCOPE.

SCHWALBE (*Deutsche medicinisch Wochenschrift*, No. 31, 1896) describes the new instrument invented by Bianchi and Bozzi, and called the phonendoscope. It consists of a resonator and two conducting tubes of soft rubber similar to those of the ordinary binaural stethoscope. By its use one can appreciate all the normal and pathologic sounds of the body. Sounds that are ordinarily not audible are rendered readily appreciable. One is supposed to hear the respiratory murmur, the pitch, and other characteristics of the sounds of the circulatory apparatus, of the organs of digestion, of the ear, both in health and in disease ; further sounds of the muscles, joints, and bones (fractures) ; of the pregnant uterus, foetal heart, and even the capillary circulation. By employing two instruments and using a tube from either, "comparative auscultation" may be practised. It may be used to determine the form, position, thickness, and relations of various viscera. To do this, one attaches a staff with a button at its distal end. This is placed over the organ to be outlined, and, by a series of gentle strokings with the finger, vibrations, readily appreciable, are produced which vary in intensity and character with the region examined. Percussion is thus replaced. The boundaries of organs are thus recognized, the individual lobes of the lungs can be outlined, the parts of the lobes overlying each other determined, as also the distinction between auricles and ventricles, etc. As numerous tubes can be attached to it, the instrument is serviceable for teaching purposes, and is warmly recommended.

BARUCH (*New York Medical Record*, October 31, 1896) also describes and recommends the instrument, mentioning how in cases of myocarditis, when the heart-sounds could not be distinguished with the stethoscope, they have been distinctly heard with the phonendoscope, and this through several thicknesses of clothing. Faint murmurs are distinctly audible; fine crepitant râles can be heard through the clothing, and the patient be examined without disrobing. As the instrument intensifies the sounds it will prove of great value to those with impaired hearing.

EGGER (*Münchener medicinische Wochenschrift*, No. 45, 1896) is of the opinion that the disadvantages of the phonendoscope far outweigh its advantages. He finds that sounds are heard at quite a distance from their seat of production, and, being much intensified, give rise to annoying admixtures. Vesicular breathing is heard relatively well, but bronchial breathing variously. Deep bronchial breathing is well heard, but variations such as amphoric breathing are very poorly transmitted. In general, low tones are well heard, higher ones, especially those of a metallic nature, very poorly. He is very sceptical regarding the possibility of distinguishing the lobes of the lung and the auricles and ventricles of the heart. For teaching classes it is of service, but for individual use the single stethoscope or the unaided ear is to be preferred.—*University Medical Magazine*.

THE DIAGNOSIS OF PERICARDIAL EFFUSION

EWART (*British Medical Journal*, March 21, 1896), intentionally directing but slight attention to various and valuable signs (friction sounds and fremitus) or symptoms (pain, alterations of respiration, position in bed, etc.), of pericardial effusion, describes other procedures of great value in making an accurate diagnosis. These are (1) accurate percussion and palpation, (2) careful auscultation, and (3) observation of the pulse. The normal area of the deep cardiac dulness is carefully described, attention being directed to the fact that the lower end of the right limit of the total dulness does not drop vertically on the hepatic line, but curves gently inward, due especially to the shape of the right auricle. The left lower angle of this dulness is also rounded off, although corresponding to the angular projection of the apex-beat. The signs of pericardial effusion are arranged numerically: (1) Considerable extension of the lateral boundaries of the total area of dulness. (2) Great extension of the absolute dulness; the sternum absolutely dull. (3) The depression of the liver. (4) Dr. Rotch's sign; dulness in the right fifth intercartilaginous space. (5) The right lower angle of the pericardial

dulness extends to the right (outward), and is not curved inward towards the sternum as is the normal cardiac dulness,—an important point in differentiating between enlargement of the heart and pericardial effusion. (6) The left lower limit of the pericardial dulness extends outward to the left, and is not rounded off as is the normal cardiac outline. The apex can be felt or, at least, heard beating somewhat inside and above the boundaries of the pericardial dulness; but the apex is never as much elevated as has been popularly supposed, and for this there exist good anatomical reasons. (7) The first rib sign. In all cases of considerable pericardial effusion, it was possible to feel with the finger the upper edge of the first rib as far as its sternal attachment. This points to a raising of the clavicle, and a relaxation of the ligament between it and the first rib. (8) The posterior pericardial patch of dulness, an area of dulness at the left inner base, extending from the spine for varying distances outward, and ceasing abruptly; commonly it does not extend higher than the ninth or tenth rib, and here ends abruptly. (9) An area of tubular breathing below the right mamma. (10) A patch of tubular breathing and egophony to the left of the tip of the left scapula. (11) Secondary pleural effusions, frequently beginning in the right pleura, but ultimately occurring in both. (12) A large and slapping pulse, not unlike the Corrigan pulse. These signs may be modified by deviations from the typical normal cases.—*University Medical Magazine*.

THE BICYCLE FOR WOMEN.

Prendergast, in *American Journal Obstetrics*, writes that: "For physical exercises for both sexes the bicycle is unexcelled." He thinks it will benefit the present and coming generation, and will be noticeable in the form of "better health, finer physical development and more stable nervous systems." "Exercise is a necessity for continued good health and mental vigor," and it is universally conceded that outdoor exercise to women and girls is of much value. Continually "housed up," dressed conventionally (extremely unhygienic), the writer argues has made them nervous wrecks. "To these the bicycle will prove a blessing.

"All the muscles of the lower extremity (those of the pelvic floor, the back and the abdomen) are brought into play; the muscles of the back in maintaining an erect posture and in balancing the wheel; the abdominal muscles in hill climbing and hard pushing, unless confined by tight corsets; the muscles of the arms in guiding the wheel and in helping carry the weight of the body in crossing rough spots in the road.

"The heart and lungs are benefited by the increased force of the circulation and by the deep inspirations.

“ This increased circulation means better nutrition to starved nerves. The muscles grow larger, firmer and respond more readily to volition. In bicycle riding, the muscles must begin to work in the proper order, and the energy of each must increase, halt and diminish according to a certain law, so that the result shall be the proper position on the wheel in order to maintain one's balance and to exert the force in the proper direction. Thus bicycling is not mere muscle gymnastics, but also, to a high degree, nerve gymnastics, if for the sake of brevity we may apply the term nerves to the whole nervous system.

“ Bicycling is a better form of exercise than horse-back-riding : (1) because hundreds can ride a wheel where one can ride a horse. (2) It is a better form of exercise. (3) The clothing can be and should be perfectly comfortable.”—*Monthly Retrospect.*

ACTION OF THE NEW YORK CITY BOARD OF HEALTH IN REFERENCE TO TUBERCULOUS DISEASE.

Dr. Hermann M. Biggs, pathologist and director of the Board's bacteriological laboratories, and Dr. T. Mitchell Prudden, the Board's consulting pathologist, have addressed a long communication to President Wilson, of the Board of Health, urging the necessity of taking some radical steps to rapidly and materially diminish the prevalence of pulmonary tuberculosis in this State.

The steps recommended, and which have been approved by the Board of Health, are :

First : That such action be taken by the Health Board as seems necessary and proper to at once secure the providing of hospital accommodations under its charge, for the care of the poor suffering from pulmonary tuberculosis, who, as active sources of danger to the community, may properly come under its supervision.

Second : That an amendment be made to the Sanitary Code, declaring that tuberculosis be officially considered a communicable disease, and formulating regulations under which its sanitary surveillance shall be exercised.

Third : That all the institutions of the city which admit and treat cases of pulmonary tuberculosis be subjected to regular and systematic inspection by officials of this Board, and that specific regulations be established for the conduct of such institutions, in accordance with the proposed amendment to the Sanitary Code.

Fourth : That the scope of the measures designed for the education of the people in regard to the nature of pulmonary tuberculosis, and the methods to be taken for its pre-

vention be enlarged, and a closer sanitary supervision be maintained over individuals suffering from this disease in the closely populated tenement districts and in the crowded workshops and public buildings of the city.

There is no doubt that any power entrusted to our present Board of Health would be used with proper judgment and with wise forethought; but in the legislation necessary to change the Sanitary Act in conformity with the recommendations of Drs. Briggs and Prudden, it should be borne in mind that our Board of Health, influenced as it must be to a certain extent by political combinations, may not always be of the high standing of the one now in power, and that an act which touches the comfort of so many should be guarded with the utmost care against the possibility of hasty or unwise action. The subject is a most important one, and calls for the wisest legislation.—*The Medical Times*.

THE ETIOLOGY OF CHOLELITHIASIS.

A very convenient classification of the causes of cholelithiasis is that of Gumprecht (*Deutsch. Med. Woch.*, 1895, 224. *The Journal of the Am. Med. Assoc.*, April, 1897.) He divides them into: first, *physical*, such as age and sex: second, as *sequelæ* of other diseases: third *chemic* alterations in the composition of the bile; and fourth, *bacteriologic*.

Age is an important predisposing factor. With advancing years we find an increase in the proportion of cholesterin in the blood, and gallstones are recognized as an appendage of middle and late life. Brinton gives the average age at which they are found as $53\frac{1}{3}$ years. They are occasionally seen even in newborn children, though of 395 cases collected by Hein only 15 were under 25, and only 3 were under 20 years of age.

As regards sex, all authorities seem to agree that they occur more frequently in female. Authors differ, however, as to the relative proportion; thus Brinton says they are four times more frequent, others give five to two, three to two, two to one, etc. The predilection for the female sex would seem to be due to sedentary habits, which are universally recognized as a potent factor. Obesity is closely allied to the foregoing, and Budd and Murchison state that they are more common in persons of stout habit. Frerichs, however, makes no mention of obesity apart from sedentary habits, and some authorities advance the view that obesity is merely a coincidence of cholelithiasis, and depends on the same causes as the latter.

Confinement has been noticed to favor gallstone formation, for instance, in prisoners and stall-fed cattle. According to Thudichum these calculi are not found in wild animals

until they have been in captivity for some time. Lunatics lead rather sedentary lives, so we may expect to find biliary concretions more frequent in them, if this factor has any influence. On examining the statistics we find this to be the case. Beadles (*Four. Mental Science*) found them in 36 per cent. of necropsies on insane females. Gorstell stated that in 1,400 examinations at the West Riding Asylum, calculi were found in 20.28 per cent. Snell (*Neurolog. Centralbl.*, June 1, 1893) in 1,000 necropsies found them in 9.2 per cent. of the 500 examinations of the insane males, 19.4 per cent. of females. The forms in which cholelithiasis most frequently occurred were dementia following melancholia, epilepsy and senile dementia.

Here it may be pointed out that statistics as to the frequency of gallstones vary. Thoma, in his *General Pathology*, says they occur in 25 per cent. of all bodies over sixty years of age, Mayo Robson and Naunyn in 10 per cent., and Schroder, from the necropsies at the Strassburg hospital, 4.4 per cent. of males and 20.16 per cent. of females. Paulsen (*Centralb. f. Chirurg.*, Feb. 4, 1893) calls attention to their infrequency in Denmark. From 1870-90 only 111 cases (30 males) were treated in the Copenhagen hospital, and during the same period 9,172 necropsies were performed. Of the 5,448 males calculi were found in 2.34 per cent., and of the 3,724 females in 5.9 per cent. Harley thinks the influence of locality, if there is any, is due to the dietary, and states that in his experience patients suffering from this affection are usually fond of fatty foods. He found these calculi very frequent and of large size in Russia, where oleaginous food is much used, while in Finland, Sweden and Denmark, where fish is the main article of diet, he states they are much less common.

In regard to gallstones as sequelæ of other diseases, Frerichs states that they frequently develop after long illness. In most instances they are apparently due to the long confinement to bed, which would seem to corroborate the theory of sedentary habits being a factor. The frequent association of gout and cholelithiasis is looked upon by several authors (Harley, Murchison, Trosseau) as pointing to a close relationship between these two affections. As calculi are usually found in carcinoma of the gall bladder, the question arose as to which was the primary affection. At first opinions differed on this point, but recent statistics all agree in looking upon the calculi as the cause, not the result. Courvoisier found them in 74 out of 84 cases, Brodowski in all of 40 cases, Bertrand 14 of 15, and Siegert believes they occur in 95 per cent. of primary carcinoma. Roger Williams, in a note to the *British Medical Journal* (Sep. 9, 1893), says in his experi-

ence gallstones are more frequently found associated with cancer of the breast than that of most other parts of the body. According to Dufort (*Rev. de Med.*, 1893, p. 274) phlegmonous or gangrenous cholecystitis is sometimes met with following an attack of typhoid fever. Hagenmülle collected eighteen of these cases in 1876. Bernheim states that he has seen the first attack of biliary colic occur during the course of typhoid. As we shall see later, Chiari found the typhoid bacillus in the gall bladder in several cases of typhoid. Dufort thinks the *B. coli* may also cause the cystitis in typhoid.

Coming now to the *chemic* cause of cholelithiasis, it is evident that all the constituents of gallstones can be found in normal bile, save mucus, epithelium and foreign bodies, such as parasites and their eggs. It is also probable that if the bile continues healthy, the elements forming the calculi will remain in solution and not separate. What then causes the formation of these concretions? According to Naunyn, biliary stasis is the primary cause. As we have seen, they are more common in the aged and in persons of obese or sedentary habit, all conditions favoring stagnation. With biliary stasis we get a catarrh with casting off of the epithelial cells; these furnish quantities of albumin. This albumin leads to the precipitation of bilirubin, which combines with the lime salts. In addition we have cholesterin, which is usually the principal component of gallstones. Cholesterin is found in many vegetables, in eggs, red blood cells and the brain. As it is so important a feature in the production of calculi, it has been suggested that the use of foods containing it be restricted as much as possible in persons subject to cholelithiasis.

With the catarrh it is possible to have infection of the contents of the gall bladder, so we may have *bacteriologic* causes added. When the normal bile of man or animals is contained in the healthy biliary passages and periodically discharged it is sterile (Gilbert and Girode). While bile is aseptic it is not antiseptic, so pathologic changes allow the entrance of micro-organisms from the duodenum or from the blood, thus infecting the bile. Microbes have been found both in calculi and in the contents of the gall bladder. Gallipa in 1886 was the first to announce *il y a des parasites dans les calculs biliaires.*" Letienne found *B. coli*, *S. albus* and *S. megatherium*, and Dupré found the *S. albus* in three cases. Charcot and Gombault, after ligating the common duct, found that the bile above the ligature became infected. Here as elsewhere in the intestinal tract the *B. coli* plays an important role. Naunyn, after ligating the ductus communis so as to produce stasis, injected *B. coli* into the gall bladders of healthy dogs, and found the animals speedily died with evid-

ences of acute cholangitis and general septic infection. Netter, Gilbert and Girode also found the *B. coli*.

Chiari has lately investigated a series of twenty-two cases of typhoid fever. In all these cases save three, typhoid bacilli were obtained from the gall bladder. They were generally present in considerable numbers, and in fifteen were obtained in pure culture. In thirteen out of the nineteen cases there was inflammation of the gall bladder with infiltration of small cells, oedema and hyperæmia. Cultures from the heart's blood, the contents of the thoracic duct, and the cerebro-spinal fluid were all negative. The diagnosis of typhoid was confirmed in the entire series of twenty-two cases by cultures from the spleen, mesenteric glands, etc. The routes by which the bacilli reach the gall bladder may be, according to this author, either by the blood, by the bile ducts, or directly through the walls of the gall bladder itself. Chiari regards the last method as very unusual, and owing to the difficulties in experimentation he does not attempt to decide between the other two. The bacilli undoubtedly multiply in the gall bladder, and thinks they possibly may cause post-typhoid cholecystitis, gallstones and relapses of typhoid.

Gilbert and Fournier have lately published a paper (*C. R. Soc. de Biologie*, Feb. 14, 1896) on the role of micro-organisms in the formation of gallstones. These observers examined a number of stones from human beings mostly, with a few from cattle, and of different ages. In the old stones the cultures were sterile, save in one case. In more recent stone, coverslips showed organisms from time to time which could not be cultivated. The fresh stones gave cultures and coverslips of *B. coli*. As a result of their observations these authors conclude that the gallstones are due to the action of the microbes contained in them. They are also of the opinion that while different organisms may cause cholelithiasis the *B. coli* is most frequently found.

NON-BACTERIAL TOXINS AND THE MECHANISM OF IMMUNITY BY ANTITOXIN SERUMS.

Calmette and Delarde, in *Ann. de L'Inst. Pasteur* (1896), *American Medico-Surgical Bulletin*, April 10, 1897, furnish their report of a series of investigations on some toxins which are of non-bacterial origin, and in a second part of the same paper some theoretical deductions bearing upon the subject of immunity are discussed.

The toxins investigated were: (1) The aqueous and ethereal extracts of jequirity seeds, yielding an impure abrin, and (2) a mixture of various snake venoms.

The toxic action of abrin was investigated in a large

number of animals, most of which succumbed to small doses of the poison. A few only were found to be relatively immune—these were the hedgehog, hen, tortoise, viper, and frog. These animals could, however, be killed by larger doses.

Experiments of the same order were made with purified abrin. Of this double doses were required to get the same action as with the impure material.

The researches with the mixture of venoms developed the facts that certain of the venomous snakes were relatively immune. The authors formerly held that this immunity was absolute, but were led to modify their opinions by those studies. The horned viper of Egypt, boa constrictor and garter snake succumbed following the injections of doses larger than that normally developed in the glands of the reptiles. Certain other animals were experimented upon and shown to be absolutely immune, *i.e.*, the hog, hedgehog and mongoose.

In discussing the theory of immunity in reptiles, the authors hold that there are "no antitoxic substances in the serum of reptiles that could explain their relative immunity, or if such a substance does exist, it is found in juxtaposition with some kind of a toxic substance which it has been impossible to isolate." Therefore the cause or causes of the relative immunity of serpents must be sought elsewhere.

The authors studied the substance of the liver and central nervous system; these organs were bruised and the blood and lymph carefully filtered, and this fluid was used with or without an addition of venom as an injection fluid, the results were negative, the animals dying as before.

Some interesting experiments were made with the serum from the hogs, which animals are notoriously immune. The mixed hog serum and venom gave absolutely negative results.

The authors' general conclusions, in so far as studied, were:

1. The serum of those animals, which are naturally refractory to toxins, rarely possesses antitoxic power with reference to these toxins.

2. Refractory warm-blooded animals can produce antitoxins by means of repeated injections of non-lethal doses of toxins. Cold-blooded animals under the same conditions do not produce these antitoxins.

3. Refractory cold-blooded animals, as the frog, can acquire an immunity against lethal doses of toxins without having their serum show any antitoxic action.

4. Antiabrin and antivenom serums can be practically utilized to produce passive immunity in man and animals, and are also of value in toxicological research in the hands of experts.

5. The active substances in antitoxic serum are not destroyed by certain chemical agents which destroy the toxin.

6. Certain substances deprived of all specific toxic action, as the serum of vaccinated animals, can exercise preventive action in various infections and intoxications.

Finally the authors come to the standpoint that "It is still an open question whether there exist any antitoxic substances, *per se*, in the serum, or whether the phenomena are not due to purely biological reactions, such as motility, inhibition, chemotaxis, etc." Further, the following admissions are given:

(1). The antitoxic function is independent of immunity, because immunity can be found to exist, and yet no antitoxins are to be found.

(2). That the two varieties of immunity, natural and acquired, are the resultants of a specialized biological property of the cells.

SERUM THERAPY.

Professor Whitla (*Dublin Med. Jour.*, No. 201; *American Medico-Surgical Bulletin*, April 10, 1897) says that there is a natural immunity and an acquired immunity to certain infective diseases. Like facts were known to obtain among animals.

The discovery of Metschnikoff was thought to explain acquired immunity through the phenomena of phagocytosis. This gives way in some minds to the view advanced by Buchner, that this depends upon chemical or unorganized substances or bodies in the blood. Metschnikoff established the fact that phagocytosis is the main defensive means possessed by a body against microscopic foes. Although this new treatment comes directly from the results of Pasteur's work, there is no Pasteurism in the history of this serum therapy, as related by various writers. Pasteur worked along the same line as Jenner. He carried it further. He showed that the introduction of the attenuated virus was not only preventive, but curative. Salmon made the next step, when he showed that an animal could be made immune by the injection of gradually increasing doses of the chemical substance made by the bacilli, without the injection of any living microbes. Behring proved that Pasteurism applied to diphtheria, as well as to anthrax and other diseases. He went still further, and found that the blood serum of the protected animal contained chemical substances. These were developed in process of immunization. These had the power of immunizing another animal if injected into its tissues. This result was found to be true not only in diphtheria, but experiment proved that like results were obtained with other infective

microbes. Behring found that the serum was not only preventive, but curative. It was an antidote in those cases where infection with the original microbe existed.

Explanation of these facts brings us into pure speculation. Martin found two poisons. One was precipitated from the diphtheritic membrane, and produces, in a single infinitesimal dose, paralysis and death in the rabbit. This poison is not found in the blood and tissues of one dying from diphtheria. In the blood of these is found another poison, which is an albumose or digested proteid. Injection of this produces all the characteristics of diphtheria. Bacilli grow in the forming membrane. They secrete a ferment. This is absorbed in the body. It produces, through action on proteids, digestive products. The chief one of these belongs to the albumose class and is a poison.

Experiments on animals prove that the antitoxic serum is an antidote to the toxin of diphtheria. The phenomenon of diphtheria in the human subject widely differ from that produced in animals. In animals it is known definitely how much toxin has been absorbed.

It cannot be determined what amount of toxin has been absorbed in man. Hence, the antitoxic dose cannot be regulated.

It is said that if the dose of toxin considerably exceeds the minimum lethal dose, there are no existing antitoxins capable of preventing death. But the element of time enters as a factor. The longer from the time of the taking in of the poison, the less the antitoxic dose required.

All elements considered, epidemics severe, and epidemics mild, show a lessened death-rate following the use of the serum.

SURGERY.

IN CHARGE OF

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LAPAROTOMY AND SUTURE FOR GASTRIC ULCERS.

Morse (*British Medical Journal*, February 13th, 1897) reports three cases of perforating gastric ulcer, in which he performed laparotomy with suture of the stomach and a thorough washing out of the peritoneum. Two of the cases recovered. In both the operation was performed within five hours after the perforation had taken place. The operation consisted in an incision, three and one-half inches long, one inch to the left of the median line, commencing at the costal cartilage and

extending down towards the umbilicus. It was made to the left of the median line in order to allow the stomach to be more easily brought out. The perforation was closed by means of Lembert's sutures, which penetrated the serous and muscular coats, two rows were inserted approximating areas of the stomach two inches wide. The peritoneal cavity was washed out with boiled water cooled to a temperature of 105° F by the use of siphon-drainage, and two long glass nozzles which were passed in all directions, thoroughly cleansing the cavity. There was considerable shock, which was treated by warmth and brandy enemata. Both patients made good recoveries and remained well, with no further sign of gastric ulcer. In the third case the patient died; she was not seen until 24 hours after perforation, and although the same operation was performed, the patient recovered from the anæsthesia severely shocked, with a rapid, hardly perceptible pulse, rapid respiration, and low temperature. She lived only a few hours.

The author says: "The duration of life after perforation of the stomach may be estimated at twenty-four hours; hence the importance of early and distinct diagnosis cannot be exaggerated. The shock following perforation is severe, and its effects can be observed to increase so rapidly that it is apparent the chances of success are diminishing in direct proportion to the length of time that is allowed to elapse between the occurrence of the injury and its repair by surgical means.—*American Journal of Medical Sciences*, April, 1897.

THE TREATMENT OF WOUNDS WITH IODOFORM AND CALOMEL.

Springel (*Centralbl. F. Chir.*, No. 5, 1897; *British Medical Journal*, April 10th, 1897) recommends the use of a mixture of equal parts of calomel and iodoform in the treatment of those wounds which, from their nature, are especially liable to undergo decomposition,—for example, a tracheotomy wound; and also in those cases where it is not possible entirely to remove all the morbid growth, such as operations on tuberculous joints. Under the influence of light the iodoform combines in some way with the calomel, and forms a reddish powder, having antiseptic and escharotic properties. But it is the cauterizing properties which the author especially values. It is used as follows: After all bleeding has been arrested, the wound is lightly sprinkled and rubbed with the powder, and then gently packed with sterile gauze. At the end of three or four days if the gauze is removed, a slight superficial slough will come away with the dressing, and the wound will present a healthy granulating surface. A special advantage of the powder is that the gauze will not adhere to the wound; it comes away readily without causing pain, bringing the slough with it.

DISINFECTION OF HANDS.

After a critical study of the literature on this subject, and an exhaustive series of carefully conducted experiments, Fürbinger and Freyhan (*Deutsch Med. Woch.*, February 4th, 1897) conclude that the consensus of opinion and evidence shows that it is practically impossible to sterilize absolutely the hands with soap and water, even in conjunction with ordinary antiseptics, but that sterilization is more nearly approached, caeteris paribus, the more alcohol is employed in the process.

The procedure advocated is the washing with soap and warm water, and brush for five minutes, rinsing in sterilized water, washing in alcohol for five minutes, washing in sterilized water, with or without a further washing in an ordinary antiseptic solution. The action of the alcohol their experiments show to be three-fold: 1. Its bactericidal action. 2. Through its properties of dissolving fats and mixing with water it prepares a way, not only for its own germicidal action, but also for that of any subsequent antiseptic. 3. It loosens the epidermis, and with it the dirt and contained bacteria, washing them away.—*American Journal of Medical Sciences*, April, 1897.

Dr. H. Merks (*N. Y. Medical Record*, March 13th, 1897) gives a report of two cases of intussusception, concluding with following remark:—

“Of the two cases reported occurring in my own personal experience, Case 1 belonged to the enteric variety, according to the classification in Treves’ ‘System of Surgery,’ and was interesting from the fact that nothing whatever passed through the bowels, the characteristic bloody and mucous discharge from the anus being absent. If no purgative had been given in this case, and operation had been resorted to within the first forty-eight hours, or even seventy-two hours, I think there can be little doubt that the operation would have been successful. Case 2 belonged to the ileo-colic variety, the most acute and rapidly fatal of all the various intussusceptions (Treves’ ‘System of Surgery’). This patient was operated on less than ten hours following the onset of symptoms, and, as ascertained during the operation, none too soon. If the case had gone another ten hours, I do not think the operation could have saved the little patient’s life.

“The lesson learned by me from these cases has been, in intussusception operate early or not at all. Do not waste time by attempting to reduce by inflation with air or water, but follow the teachings of common sense, viz., under strict asepsis open the abdomen before adhesions have formed and reduce the inverted bowel.”

OBSTETRICS.

IN CHARGE OF

H. L. REDDY, M.D., L. R. C. P., London,

Professor of Obstetrics, University of Bishop's College; Physician Accoucheur Women's Hospital; Physician to the Western Hospital.

Dr. W. E. Parke's (*American Gynæc. and Obstet. Journal*) Paper on "When shall we use the Forceps?" is summed up as follows:—

1. The indication for the use of the forceps never or rarely arises during the first stage of labor before the membranes have been ruptured,

2. It may be necessary to employ the forceps during the first stage, when the waters have escaped, on account of the increasing exhaustion of mother or child.

3. It is proper to apply the forceps during the first stage of labor for accidents, whenever they may arise, notably in certain cases of convulsions, placentæ præviæ, and prolapse of the cord.

4. In the second stage it is proper to apply the forceps one half hour after the head ceases to advance when there is no disproportion between the passage and passenger.

5. When, however, there is a tight fit between the child and the birth canal, the use of the forceps may be delayed. This delay should rarely exceed two hours after the head ceases to advance.

6. If the head is engaged, and neither advances with a pain nor recedes after the pain, the forceps should be applied promptly.

A LONG PREGNANCY.

E. F. Ross of Sidney reports the case of a III para, whose previous pregnancies were uneventful, in whom foetal movements were first felt on September 30th, 1895, and recognized by the writer, October 6th, and noted weekly by him until her delivery May 20th, 1896. As foetal movements cannot be recognized by the examiner before the third month of pregnancy, at least eighty-four days must be added, which make the period of her gestation three hundred and eleven days. Menstruation persisted for three months after the appearance of foetal movements. The delivery was accomplished by artificial dilatation of the cervix and high forceps under chloroform. The foetal membranes were very thick, and there was very little liquor amnii. The placenta was adherent. The child, a female, weighed about ten pounds. The posterior fontanelle was closed, the anterior fontanelle was small.—*The American Gynæc. & Obstet. Journal.*

HYPEREMESIS GRAVIDARUM.

W. W. Holliday, Cleveland, O., reports two cases on this subject. The first was a lady of twenty-seven, who gave a history of general malaise, some vomiting and continuous nausea for three or four days. Some nine months before, she had aborted at the sixth week. Had always been irregular and scanty in her menstruation, and had had attacks of vomiting. No family history of cancer or tuberculosis. It was six weeks since the last menstruation. Examination of uterus, cervix and abdomen showed no changes indicating pregnancy. Slight pain in epigastric region and in back of neck, no tenderness of vertebræ. Bowels readily moved, urine normal. Being suspicious of pregnancy, rest in bed with powders of calomel and bicarbonate sodium was ordered, with counter-irritation over the stomach. No relief was given, and bismuth subnitrate with carbolic acid in mucillaginus acaciæ and peppermint water was tried but not retained. Bismuth and oxalate of cerium were tried with no benefit. She was sustained by peptonized milk enemas. Drop doses of wine of ipecac and Fowler's solution also failed.

Another examination revealed no changes in uterus or cervix. Lavage was refused until after consultation with another doctor, when it was tried once a day for three days with no benefit whatever. Strychnia was given hypodermically with morphine, and hydrochlorate of cocaine tablets were given by mouth. The patient failed in strength, and a surgeon was called who examined the patient thoroughly, *except* the uterus under ether, with negative conclusions. The death of the patient followed, and the post mortem showed a pregnancy of three months. The growth must have been very rapid during the last few weeks. The writer says: "We have been told of some of the mistakes of Moses. We occasionally make them ourselves, and while it may not be pleasant or even fashionable to talk of them, it occurred to me it might be practical if we did it more."

The second case showed unmistakable signs of pregnancy, and remedies similar to those used in the preceding case were tried with no benefit. Copland's plan of dilating the cervix after dipping the instrument in pure carbolic acid was tried, but failed to give relief. As there was erosion of the cervix, a tampon saturated with a ten per cent. solution of ichthyol in glycerine was applied to the cervix. This was retained for four days, and complete freedom from nausea resulted. La Terre of Rome recommends a twenty per cent. solution of ichthyol in glycerine. Another writer has found that vesication over the fourth and fifth dorsal vertebræ gave relief. The necessity of not waiting until the patient is exhausted before operating is very apparent from all the literature on the subject.

IMPORTANCE OF ABDOMINAL PALPATION COMPARED TO VAGINAL EXAMINATION.

Ahlfeld (*Deut. Med. Woch.*) does not agree with the recommendations of Leopold to employ abdominal palpation exclusively as a means of diagnosis during the progress of labor. Abdominal palpation alone *is not sufficient to recognize* existing or impending dangers; intra-partum, its execution is difficult, and if thoroughly performed not free from danger. The obstetrician who manages a labor case without performing vaginal examination is largely trusting to chance. *With proper asepsis vaginal examinations are free from danger.*

DIAGNOSIS OF PREGNANCY IN THE EARLY MONTHS.

Rinman observed in two cases as an early symptom of pregnancy, slender cords radiating from the nipple, which he believes to be the hypertrophic acini of the glands. Secretion was not yet present. This observation has been confirmed by others.

TECHNIQUE OF CÆSARIAN SECTION.

The following is Dr. Hirst's technique.

Preparation for an Abdominal Section.—Give patient on admission a full hot bath. Have the patient kept in bed from the time she enters the hospital until the operation is performed. Administer pill strychnia gr. $\frac{1}{20}$, digitalis gr. $\frac{1}{2}$, quinine grs. 2 t. i. d. before operation. Secure movements of bowels by 2 drachms Rochelle salts every evening. Have the heart and lungs examined, also examine urine.

Day before Operation.—*Diet* as follows: gruel for breakfast, soup for dinner, milk toast for supper, one glass of milk 10 a.m. to 4 p.m. and 9 p.m.

Medicine.—5 p.m. afternoon before the operation, 10 grains sulphonal in half glass of boiling water cooled down to temperature that permits of its being drunk if patient is nervous and has been sleepless. 9 p.m., half ounce Epsom salts in a tumblerful of water.

Evening before Operation.—First cleansing of the abdomen as follows:

Cleansing.—1. Sterilize the following articles for twenty minutes at 240° , soft bristle brush, absorbent cotton, one-half dozen towels, gauze unmedicated, binder, long gown.

2. The resident physician, or under his supervision the nurse who cleanses the abdomen, must prepare his or her hands and arms as though about to operate, namely, remove rings, scrub with brush, hot water and tincture of green soap for ten minutes; clean nails with nail file. Scrub hands and

arms with benzine and then with alcohol, immerse hands and arms in bichloride solution (1 : 1000) for two minutes. Then put on the gown.

3. The abdomen from ensiform to symphysis and from flank to flank must be scrubbed with soft bristle brush, tincture of green soap and hot water thoroughly (for at least ten minutes), paying special attention to navel and to pubic regions. Wipe off the razor with cotton and alcohol. Shave pubis, and then scrub thoroughly with alcohol. Cover up the abdomen with the sterile gauze and put on the binder.

Morning of the operation.—Give cup of beef tea at 7 a.m. Hands of nurse or the doctor cleansed as described above. Articles re-sterilized as described above, same cleansing of abdomen repeated as above described, but in addition before alcohol scrubbing, scrub abdomen with benzine. Wring out a sterile towel in 1 : 1000 bichloride solution, and cover the abdomen with the towel, put over it a thick layer of sterile cotton; apply binder. Catheterize the woman just before anæsthetization with sterile glass catheter in aseptic manner. Give vaginal douche, 1 quart of 1 : 4000 solution followed by a little sterile water. If bowels have not opened freely give enema, a pint of soapsuds, and one drachm of turpentine.

The Operation.—With a large scalpel held firmly in the full hand a free incision is made from two inches above the umbilicus to just above the symphysis. This incision may be carried entirely through the abdominal wall in its upper part, as the intestines are out of the way. The abdominal opening is enlarged with scissors downward as low as possible. An assistant makes the wound gape while the operator delivers the womb from the abdominal cavity. The assistant then approximates the edges of the abdominal wound as closely as possible around and above the cervix, at the same time squeezing the latter with the outspread hands. With a few rapid but light strokes of the knife the operator makes an incision an inch in length, through the uterine muscle, and not through the membranes, so as not to cut the child. Then with one rapid movement of the left hand and arm, the uterine wall is torn down to the internal os, the membranes are ruptured, the placenta if in the way is detached and pushed aside, the child is seized by the most accessible part, either shoulder or leg is delivered, and with the placenta still attached to it is dropped into a sterile sheet spread over the outstretched arms of an assistant, who stands directly at one's left hand, and whose duty it is to revive the child if it is asphyxiated, and to tie and cut the cord.

Up to this point the operation rarely requires seventy-five seconds. Then follows an easy hysterectomy, ligation of the ovarian arteries and of the arteries of the round ligaments,

application of clamps, cutting of the broad ligaments, preparation of peritoneal flaps, and amputation of the womb, ligation of the uterine arteries, and over-sewing of the stump which is dropped.

The abdominal wall may be closed by close-set interrupted stitches,—the easiest plan for a beginner, or by any other method that a more experienced operator may prefer.—*The Amer. Jour. Obstet.*

Medical Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, December 31st, 1896.

GEORGE WILKINS, M. D., PRESIDENT, IN THE CHAIR.

A CARDIAC CASE FOR DIAGNOSIS.

Dr. W. F. HAMILTON exhibited a boy aged ten years, the subject of a cardiac lesion. He read the history of the case, demonstrating the physical signs present, and pointed out the difficulty of classifying it among any of the recognized heart lesions. The case was examined thoroughly by the members present, but no one was able to give a satisfactory solution of the problem.

A CASE OF VICARIOUS LABOR PAINS.

Dr. WYATT JOHNSTON read for Dr. D. D. MACTAGGART and himself a paper on this subject.

ASSOCIATIONS OF TONSILLITIS AND DIPHTHERIA.

Dr. J. C. CAMERON related this case.

Dr. C. W. WILSON related the history of two of the cases referred to by Dr. Johnston. The first was a case of hernia, and was seen on the second day after tonsillitis had developed. The follicles were filled with a dirty grey secretion which could be rubbed off, and was discrete, not in patches. A swab was taken and sent to Dr. Johnston, who found no diphtheria bacilli microscopically, but next morning the growth upon the culture medium showed diphtheria bacilli distinctly. Three cc. of Schering's antitoxin were injected, and nothing further developed. Two days later, although no constitutional symptoms were present, another swab was submitted and diphtheria bacilli found once more, and four days later again they had disappeared. A case of diphtheria had occurred two weeks previously in the house of a cousin, where frequent visits were interchanged.

The second case occurred in the Montreal General Hospital. A child suffering from hip-joint disease developed a tonsillitis with acute symptoms. A swab was submitted and a negative report received. The tonsillitis subsided; but a second swab, taken two days later, showed diphtheria, and the child was sent to the Civic Hospital, to avoid causing infection to the other occupants of the ward, and the disease has had an uneventful course.

Dr. A. W. HALDIMAND referred to a case in which there was a distinct membrane on the tonsils, soft palate and pharynx, and which he immediately diagnosed as diphtheria. A culture was submitted to Dr. Johnston who reported that no bacilli were present. The membrane gradually disappeared under the use of peroxide of hydrogen spray. From a second swab a report was received of "present (?)"

Dr. G. T. ROSS thought the subject was of great practical importance, and that Dr. Johnston's statements supported the progressive infection theory of diphtheria put forth by several authors. They considered that many cases were of the nature of ordinary angina, infective, but containing no true bacilli, and that later true diphtheria was engrafted upon them, perhaps a week after the appearance of the tonsillitis. He alluded to an epidemic which had been recently reported of 100 cases of sore throat, in a school of 300 pupils, where there were no symptoms of diphtheria, but later on a case of diphtheria came in contact with one of these, and the disease developed. He asked if Dr. Johnston had done any work on the microbic theory of rheumatism. This disease was said by some writers to develop from tonsillitis by the lymphatics supplying the tonsils, conducting the poison into the system.

Dr. WYATT JOHNSTON in reply said he did not consider it necessary to isolate cases in which only a few bacilli were found. It was, however, a good plan to give a dose of antitoxin. He had had no experience of rheumatic tonsillitis.

THE QUANTITATIVE ESTIMATION OF THE SERUM REACTION BY THE DRIED-BLOOD METHOD.

Dr. WYATT JOHNSTON read a report of this method by Dr. D. D. MACTAGGART and himself.

Stated Meeting January 15th, 1897.

JAS. BELL, M.D., IN THE CHAIR.

"TIC CONVULSIF."

Dr. F. G. FINLEY exhibited two brothers suffering from this malady.

Dr. W. F. HAMILTON said that these patients reminded him of a case which was a puzzle in diagnosis. The first case shown by Dr. Finley illustrated the character of the movements in his own case; there were increased and spasmodic movements on voluntary motion, but, in addition, the trunk muscles were involved as well as the diaphragm and other respiratory muscles, causing a quick expiratory puff at times during the height of a seizure. He had classified it as one of paramyoclonus multiplex. The disease dated from the age of three years to the present age of twenty-three. There were no mental changes or epileptiform seizures, and the family was not one showing neuropathic tendencies.

Dr. W. E. DEEKS suggested that the movements might be due to a loss by control of the cerebral centres over the lower or spinal cord centres, the result being that the latter acted in an irregular manner; the cerebral centres initiating movements which they could not control.

RENAL CALCULI.

Dr. J. B. McCONNELL read the medical and Dr. G. E. ARMSTRONG the surgical report of this case.

RENAL AND VESICAL CALCULI.

Dr. JAS. BELL exhibited the specimens.

Dr. LAPHORN SMITH asked Dr. McConnell if he considered the disease preventable, and if he knew whether the patient was in the habit of abstaining from water before the disease began. Questioning whether the case could have been one of traumatic delirium, he referred to one occurring in his own practice following a total hysterectomy which he had attributed however to the large quantity of iodoform in the gauze packing.

He asked Dr. Bell if he did not think it would be better to operate on the kidney through the abdomen, as he had himself extirpated a kidney by this method. He thought it was of the greatest advantage before removing one kidney to feel the other, and also to see that it contained no stones. He felt that it was only prejudice that favored the operation in the back. The latter's only advantage was from the better drainage secured. He thought the fear of infecting the peritoneal cavity an ephemeral one, as the kidney which he had removed contained several quarts of pus and many calculi, and he had had no difficulty in disinfecting the peritoneal cavity; the same was true after the rupture of stinking pus-tubes.

Dr. McCONNELL, in reply to Dr. Smith, said that he was quite unable to give any directions as to how one might prevent the formation of stone. He could not suggest keeping the urine either acid or alkaline, as calculi formed under both conditions. Of the patient's previous habits he knew nothing. He was very temperate, took good care of himself, but indulged a great deal in Turkish baths. He was inclined to attribute the final event to the condition of the kidneys to a large extent, and thought that chloroform would have been preferable to ether as the anæsthetic.

Dr. ARMSTRONG said that the diagnosis had been made by Dr. McConnell. The man was failing in health, and passing pus and blood in the urine after exercise. This pointed directly to the kidneys. He had been in doubt of finding stone, as he did not understand how a calculus could be present without producing pain.

The question of abdominal section was important, and a great deal might be said in its favor in cases of contemplated nephrectomy. Exploring through the front, too, would establish the presence of a second kidney or of any contraction of the ureter.

He felt that the impression that ether was likely to have an injurious effect upon the kidneys was not well founded. The only evidence he had seen of the relative effects of chloroform and ether on the kidney was in Prof. Schede's Clinic, where upwards of a hundred cases of each had been examined before and after anæsthesia, and the results were in favor of ether as being the less injurious.

Dr. Bell's cases opened up a very important field for discussion, namely, the treatment of vesical calculi in old men with large prostates. He personally preferred the crushing operation, as the statistics were far ahead of the other methods.

The modern operation of litholopaxy gave most satisfactory re-

sults. It was true, stones were sometimes re-formed in the bladder after litholopaxy, but they sometimes increased after perineal and suprapubic lithotomy. Mr. Reginald Harrison was now suggesting that in suitable cases double vasectomy should be performed some time previous to the crushing of the stone. By this means he sought to bring about an atrophy of the prostate and thus facilitate the litholopaxy.

Dr. JAMES BELL, in reply, said he thought there were many obvious reasons for not operating in pyonephrosis through the abdominal wall, but for nephrectomy it was otherwise. It was important to verify the existence of the second kidney, and it offered greater facilities for dealing with the pedicle, especially on the right side, where the renal veins were short and often difficult to secure. In comparing pus from the kidneys with that from stinking pustules one must remember that pus differed in virulence. Thus, pus from an appendix abscess was much more dangerous than that from the Fallopian tubes, and probably kidney pus was also more virulent; consequently, the escape of urine and pus into the abdominal cavity would be a very serious complication. He referred to the frequency with which stone occurred in both kidneys at once, and to the extreme difficulty of making a definite diagnosis, many cases with hæmaturia giving no clue as to which kidney contained the stone.

The statement that ether was injurious in kidney cases, Dr. Bell looked upon as simply and purely a libel upon ether. Wood and others, during the last few years, had proved the contrary. With reference to the question of crushing, his reason for not doing so in the young man was that he was suffering from cystitis, and had had urethral fever every time an instrument had been passed. Besides this, he was, speaking generally, in favor of the cutting operation, especially in old men. With a large prostatic shelf and possibly a sacculated bladder, there was the greatest difficulty in washing out the last fragments of the stone. In females, and young men with healthy bladders, litholopaxy might be preferred, though he saw no reason why a cutting operation should be dangerous. The results of the former were better, as Dr. Armstrong had said, but that was because the statistics included the operation of pre-aseptic days. He entirely dissented from the statement that litholopaxy was better than cutting in inexperienced hands, for no surgical procedure required more technical skill and experience than the use of the lithotrite.

THE BIOLOGICAL CONSIDERATION OF MENSTRUATION.

Dr. J. CLARENCE WEBSTER read a paper on this subject.

Dr. WESLEY MILLS said he regretted that so interesting and exhaustive a paper had been read at so late an hour, as he would like to have heard it discussed and to have considered most of the points raised, himself. As he had said at a recent meeting, he was not prepared to believe that, in primitive peoples or among perfectly normal women at the present time, there was no connection between ovulation and menstruation. The phenomena of rut in the lower animals and menstruation in the human female had points of biological resemblance. Rut was divisible into stages and was accompanied by psychic phenomena,

which had their analogies in the human subject during menstruation. It might well be that in our complex modern life there might result some dislocation of processes that were once more closely related in time and physiological sequence. Apart from rut, it did not seem to be possible to understand the evolution of menstruation. No doubt the advances in our knowledge of the innervation of the viscera, together with a deepening conviction of the importance of the essential connection of the nervous system with nutritional changes (metabolism) as such, in all parts must lead to the belief that menstruation, like other vital processes, was controlled by the nervous centres. Nevertheless, to assume that there was one single nerve presiding over menstruation in the same sense as nerves do over glands did not seem to harmonize well with physiological conceptions. Menstruation was part of a series of changes in the uterus, over all of which the nervous system presided; further, menstruation was but one of a series of related processes in the generative organs, all of which were correlated by the nervous system. Such views, and the conception that there was throughout a difference between the sexes not confined to the generative organs of the body, but extending to the mind, were doctrines Dr. Mills had long been accustomed to teach, and the realization of which seemed of vital importance now that the social and economic relations of the sexes were undergoing such radical changes.

Dr. LAPHORN SMITH felt indebted to Dr. Webster for his timely paper. The generally accepted views concerning menstruation, as taught in the text-books, were wrong; and Dr. Webster had performed a useful task in collecting the more correct and modern views, scattered through the literature of the last few years into one paper. Dr. Smith felt convinced that ovulation was going on long before menstruation began and long after it had stopped; that nature prepared a fresh nest every month, and intended that a fecundated egg should invariably come down to occupy it, but that if by any chance the egg was not fertilized, it died, and the nest being of no use degenerated and came away. In other words, the menstrual flow was the funeral of a dead ovum. Sir William Hingston and others, including the speaker, knew of many women in this province who were normal, that is to say, had never menstruated, having become pregnant before menstruation began and were either pregnant or nursing until the menopause. Professor King, of Washington, in an able study of hysteria, pointed out that primeval women instinctively took measures, such as feigning sickness and attracting the attention of a male or calling for help, &c., to ensure that their ovum should become impregnated before menstruation appeared or as soon as their uterus was ready to receive the egg and nourish it, so that a menstrual flow was exceedingly rare among them. Menstruation as we see it to-day is a product of civilization; the more highly civilized and cultivated the woman, the more, as a rule, did they flow. Dr. Smith also agreed with Johnston, of Cincinnati, that menstruation, like a tidal wave of blood towards the uterus leading to the formation of a nest, was under the control of the great sympathetic nerve, and that by tying the main uterine branch of it near the corner of the uterus, menstruation would be stopped. The removal of the ovaries alone without tying the nerve under the tubes did not arrest menstruation. He had several cases still men-

struating after removal of every particle of both ovaries. But the removal of the tubes and leaving the ovaries would stop menstruation. Some are of the opinion that pregnancy takes place after menstruation, but this is an error ; if that were so, the Jews, who abstain from intercourse for a week. and among some for twelve days, would not be more prolific than Christians ; and yet they are. Probably keeping the males away for twelve or fifteen days was an advantage, because breeders of animals found that when the males and females were kept apart for some time they would breed more surely than if they were kept constantly together. He had carefully inquired from women who had been seduced and became pregnant, and had learned that the only intercourse had been just before a period, and that the period then due did not make its appearance. A leading physician had told him that he had several young ladies in his practice who had to be locked up every month for a few days before their period in order to avoid a scandal, but they could be safely allowed out the moment the flow appeared. This, he thought, proved that nature meant women to be married before menstruation began, and to be pregnant or nursing all the time for the next thirty years.

Dr. W. E. DEEKS thought we must look upon menstruation as analogous to rut in the lower animals. If not, what in the process of evolution had become of this function, and what in the lower forms corresponded to menstruation?

In invertebrate life, as well as in a great many forms of vertebrates, ovulation was not necessarily periodical not depended in any way on the access of the male, but went on continuously for months. Why not then look upon ovulation in the same way as a gland functioning independently and producing ova more or less continuously between and during menstrual periods?

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Editorial.

TWENTY-SIXTH CONVOCATION OF THE MEDICAL FACULTY OF THE UNIVERSITY OF BISHOP'S COLLEGE.

Wednesday, the 7th of April, 1897, was a red letter day for the Medical and Dental students of Bishop's College. It was the first combination Convocation for conferring degrees in Medicine and Dentistry, and the result was the most successful Convocation which the University has ever had. The students had decorated the large Synod Hall with the University colors, while the flags of the Medical and Dental students made a fitting background to the platform. The *tout ensemble* was very pleasing to the eye, and removed that bareness of the Hall which has been so noticeable in former years. The attendance was very large, every available spot being occupied, while several hundred could not even get admission, and were reluctantly obliged to turn away. The proportion of young ladies in the audience was unusually large, and they evidenced their interest in the proceedings by nearly all remaining to the very last. The day was a brilliant one, the sun shone brightly, and the air was balmy and warm. Such weather no doubt did much for the success of the meeting. The procession entered the Hall, headed by the Venerable Chancellor Heneker, and the Vice Chancellor, the Rev. Dean Norman, and the Rev. Dr. Adams, Principal of the Uni-

versity. The students, who were present in unusual force, gave them a warm reception, and during the whole proceedings showed that they considered themselves entitled to play their part in the programme of the day.

The Chancellor in opening the proceedings referred in feeling terms to the very great loss which the University had sustained in the recent death of Mr. A. D. Nicolls, the Bursar of the University. He also referred to the great success which was attending the College during the present session, the attendance of students being fully up to, and even beyond, the accommodation in the College. He stated that the financial position was good,—there being a balance—though small—on the right side of the ledger, and that they had every reason to be satisfied at the position of the Jubilee Fund. He called upon the Dean, Dr. F. Wayland Campbell, to make his report.

Dr. Campbell, on rising, was received with applause and by very hearty cheering from the students. He said that it was with great satisfaction he was able to state that the Session which had just terminated was the most successful they had ever had—the number of enregistered Students being 104. Such a record was not only an encouragement for the future,—but was an acknowledgment that the labors of the Faculty during the past twenty-six years had not been in vain. With the day of small things vivid in his memory he would, he knew, be excused if his breast swelled with pride at the record of to-day, and with hope for a brighter future. In fact, if the attendance became much larger, the accommodation at their disposal would be taxed to the utmost. He referred to the great improvements which had been made in the College building, especially as regards the comfort of students, and that still others in the same direction would be made after the Summer season had closed.

After reading the Pass List the following were presented, and had the degree of C.M., M.D., conferred on them by Chancellor Heneker: W. M. Cass, C. A. Fortin, Miss Catherine Lorigan, Miss Helen McDonald, B.A., H. R. Meikle, William Oppzoomer, D. A. Roger, W. J. Webb and John Empson.

The awarding of the prizes and medals followed, the following being the recipients. As each advanced to the

platform, they were loudly applauded—their fellow-students especially being very enthusiastic.

Wood Gold Medal—for the highest aggregate number of marks on all subjects—C. A. Fortin.

Nelson Gold Medal—for best special examination in Surgery, open to all students who have taken honors—William Oppzooomer.

Chancellor's Prize—for the best final examination. Miss McDonald.

David Silver Medal—for the highest number of marks on the Primary examination.—Mr. E. L. Sutherland.

Senior Dissector's Prize.—Mr. T. D. McGregor.

Junior Dissector's Prize.—Mr. F. G. Henry.

Histology Prize.—Mr. F. C. Nichol.

The following also received the degree of D.D.S. (Doctor of Dental Surgery): Messrs. J. A. Munroe, W. S. McLaren, D. J. Berwick, B. S. Stackhouse, B. J. S. Stackhouse, C. W. R. Rondeau and D. N. Garneau.

The Valedictory on behalf of the Medical Graduating Class was given by Dr. Fortin, and on behalf of the Dental Graduating Class by Dr. Munroe.

The address on behalf of the Medical Faculty to the Graduating Class was given by Dr. Drummond, and on behalf of the Dental Department by Dr. S. Globensky. Brief addresses followed by Vice-Chancellor Norman and Principal Adams.

BRITISH MEDICAL ASSOCIATION.

MONTREAL MEETING, 1897.

We publish with very great pleasure the list given below, of the officers appointed by the Home authorities for the forthcoming Meeting of the British Medical Association in Montreal. It would, we think, be difficult to have a more distinguished list of office-bearers, especially when it is taken into account how many of the leaders in the profession in the Old Country have already filled the most important posts at previous meetings, and, as a consequence of the wise system of rotation adopted by the Council of the Association, were not eligible to serve here. That so many who have not previously accepted office have consented to

preside here in Canada, is a matter for genuine self-congratulation.

Of those appointed to deliver addresses we need say little. Dr. Osler is one of ourselves, even if a great American University has for a time secured him for its staff—and as a Canadian, is a most happy choice, inasmuch as he belongs to Toronto as well as to Montreal. Mr. Mitchell Banks is a most popular surgeon in the North of England, is a speaker of great power, and is already no stranger in Canada.

Of Presidents of Sections, we heartily congratulate the Association as well as ourselves that we have secured two such Canadians as Dr. E. P. Lachapelle and Dr. R. M. Bucke. Most of the names of the remaining Presidents are familiar to all of us : Stephen Mackenzie, Christopher Heath, Watson Cheyne, Edward Nettleship and Malcolm Morris ; these names must immediately gain the approval and self-congratulation of every Canadian. Drs. Sinclair, Waller, Leech and Greville Macdonald may not be so generally known, though each is recognized as a leader by those interested in his special line of work. W. J. Sinclair, Professor of Gynæcology at Owens College, Manchester, is a brilliant and thoughtful writer in matters gynæcological. Dr. Leech, another of the Professors at Owens College, is Senior Physician to the Manchester Royal Infirmary, the founder of one of the very few active schools of Pharmacology in Great Britain, and an authority upon that subject. Dr. A. Waller, the brilliant son of a celebrated physiologist, is perhaps the brightest and most original of metropolitan physiologists. Dr. Greville Macdonald, another brilliant son of a celebrated man (his father is George Macdonald, the novelist), is one of the most popular and highly esteemed of English laryngologists.

Referring to the lists of Vice-Presidents in the various subjects, it will be seen that a most conscientious attempt has been made by the parent Association, at the suggestion of the Local Executive Committee, to embrace the whole of the Dominion. When Montreal of its own free will gave up the opportunity of appointing its leading practitioners as Presidents of the various sections, it is but becoming that leaders in the profession in Montreal should be appointed to

Vice-Presidential posts, and no one can object if this list contains a considerable portion of well-known Montreal names; but it will be seen that Toronto, Quebec, Ottawa, London, Winnipeg, Hamilton, Halifax, St. John, N.B., Victoria and all the leading centres are given recognition, and are duly honored so far as it is in the power of the authorities to do so. Naturally there has been a difficulty in appropriately including all the leaders in the Sections of Medicine, Surgery and Gynæcology, it has in fact been impossible to include all whom we would have desired to see nominated as Vice-Presidents, but it must be confessed that as far as they go the lists in these subjects are excellent; thus, in short, by these lists a successful Meeting is ensured, both from an Imperial and a National point of view.

PRELIMINARY PROGRAMME.

President: Henry Barnes, M.D., M.R.C.S., F.R.S.E., J.P., Physician Cumberland Infirmary, Carlisle; President-Elect: T. G. Roddick, M.D., M.P., Professor of Surgery in McGill University, Montreal; President of the Council: Robert Saundby, M.D., F.R.C.P., Physician to the General Hospital, Birmingham, 83A Edmund Street, Birmingham; Treasurer: Charles Parsons, M.D., Dover.

Addresses will be delivered as follows: Medicine.—Dr. W. Osler, F.R.C.P., Professor of Medicine in the Johns Hopkins Univ., Baltimore, U.S.A.; Surgery.—Mr. William Mitchell Banks, F.R.C.S., Surgeon to the Liverpool Royal Infirmary; Public Medicine.—

The Scientific Business of the Meeting will be conducted in eleven sections, as follows, namely:—

MEDICINE.—President: Dr. Stephen Mackenzie, London. Vice-Presidents: Dr. J. E. Graham, Toronto; Dr. W. Bayard, St. John, N.B.; Dr. J. P. Rottot, Montreal; Dr. F. W. Campbell, Montreal; Dr. J. Stewart, Montreal; Dr. H. P. Wright, Ottawa. Hon. Secretaries: Dr. H. A. Lafleur, Montreal; Dr. W. F. Hamilton, Montreal; Dr. Wm. Pasteur, 4 Chandos Street, Cavendish Sq., London, W.

SURGERY.—President: Mr. Christopher Heath, London. Vice-Presidents: Sir Wm. Hingston, Montreal; Hon. Dr. Sullivan, Kingston, Ont.; Hon. Dr. Farrell, Halifax, N.S.; Dr. I. H. Cameron, Toronto; Dr. F. LeM. Grasset, Toronto; Dr. James Bell, Montreal; Dr. G. E. Armstrong, Montreal. Hon. Secretaries: Dr. R. C. Kirkpatrick, Montreal; Dr. Thomas Walker, St. John, N.B.; Mr. Jordan Lloyd, F.R.C.S., Broad Street, Birmingham.

PUBLIC MEDICINE.—President: Dr. E. P. Lachapelle, Montreal. Vice-Presidents: Dr. Montizambert, Quebec; Dr. R. Craik, Montreal; Dr. P. H. Bryce, Toronto; Sir James Grant, Ottawa; Dr. R. H. Powell, Ottawa. Hon. Secretaries: Dr. Wyatt Johnston, Montreal; Dr. E. Pelletier, Montreal; Dr. H. Harvey Littlejohn, Town Hall, Sheffield.

OBSTETRICS AND GYNÆCOLOGY.—President: Dr. William Japp Sinclair, Manchester. Vice-Presidents: Dr. Wm. Gardner, Montreal; Dr. James Perrigo, Montreal; Dr. J. A. Temple, Toronto; Dr. J. C. Cameron, Montreal; Dr. T. J. Alloway, Montreal; Dr. James Ross, Toronto. Hon. Secretaries: Dr. D. J. Evans, Montreal; Dr. W. Burnett, Montreal; Dr. A. E. Giles, 58 Harley Street, Cavendish Sq., London, W.

PHARMACOLOGY AND THERAPEUTICS.—President: Dr. D. J. Leech, Manchester. Vice-Presidents: Dr. A. D. Blackader, Montreal; Dr. James Thorburn, Toronto; Dr. C. R. Church, Ottawa; Dr. J. B. McConnell, Montreal; Dr. F. J. Austin, Sherbrooke; Dr. Walter George Smith, Dublin. Hon. Secretaries: Dr. F. X. L. DeMartigny, Montreal; Dr. J. R. Spier, Montreal; Dr. Charles Robertshaw Marshall, Pharmacological Laboratory, Downing College, Cambridge.

PATHOLOGY AND BACTERIOLOGY.—President: Mr. Watson Cheyne, F.R.S., London. Vice-Presidents: Dr. J. G. Adami, Montreal; Dr. J. Caven, Toronto; Dr. J. Stewart, Halifax; Dr. J. C. Davie, Victoria; Dr. L. C. Prevost, Ottawa; Dr. M. T. Brennan, Montreal. Hon. Secretaries: Dr. W. T. Connell, Kingston; Dr. C. F. Martin, Montreal; Dr. Robert Boyce, University College, Liverpool.

PSYCHOLOGY.—President: Dr. R. M. Bucke, London, Ont. Vice-Presidents: Dr. D. Clark, Toronto; Dr. T. J. Burgess, Verdun, Que.; Dr. A. Vallée, Quebec; Dr. G. Wilkins, Montreal. Hon. Secretaries: Dr. J. V. Anglin, Montreal; Dr. Geo. Villeneuve, Montreal; Dr. J. G. Blandford, London County Asylum, Banstead, Surrey.

OPHTHALMOLOGY.—President: Mr. Edward Nettleship, F.R.C.S., London. Vice-Presidents: Dr. F. Buller, Montreal; Dr. R. A. Reeve, Toronto; Dr. Ed. Desjardins, Montreal; Dr. A. A. Foucher, Montreal. Hon. Secretaries: Dr. W. H. Smith, Winnipeg; Dr. Jehin Prume, Montreal; Mr. Thomas Herbert Bickerton, 88 Rodney Street, Liverpool.

LARYNGOLOGY AND OTOTOLOGY.—President: Dr. Greville Macdonald, London. Vice-Presidents: Dr. W. Tobin, Halifax; Dr. G. A. S. Ryerson, Toronto; Dr. H. S. Birkett, Montreal; Dr. G. R. McDonagh, Toronto. Hon. Secretaries: Dr. A. Chrétien, Montreal; Dr. H. D. Hamilton, Montreal; Dr. W. Permewan, 7 Rodney Street, Liverpool.

ANATOMY AND PHYSIOLOGY.—President; Dr. Augustus D. Waller, F.R.S., London. Vice-Presidents: Dr. F. J. Shepherd, Montreal; Dr. A. B. McCallum, Toronto; Dr. T. Wesley Mills, Montreal; Dr. A. Primrose, Toronto; Dr. J. B. A. Lamarche, Montreal; Dr. D. B. Fraser, Stratford, Ontario. Hon. Secretaries: Dr. J. M. Elder, Montreal; Dr. W. S. Morrow, Montreal.

DERMATOLOGY.—President: Mr. Malcolm Morris, London. Vice-Presidents: Dr. J. E. Graham, Toronto; Dr. F. J. Shepherd, Montreal; Dr. J. A. S. Brunelle, Montreal; Dr. J. L. Milne, Victoria, B.C. Hon. Secretaries: Dr. Gordon Campbell, Montreal; Dr. J. M. Jack, Montreal; Dr. James Galloway, 21 Queen Anne Street, Cavendish Square, London, W.

PROVINCIAL PROGRAMME.

Wednesday, August 18th to Thursday, August 26th.—Meeting of the British Association for the Advancement of Science at Toronto.

Thursday, August 26th, to Monday, August 30th.—Excursion for Members and Guests of the British Association, from Toronto via Niagara, Kingston, The Thousand Islands, Ottawa, etc., to Montreal.

Monday, August 30th.—Meeting of the Canadian Medical Association at Montreal.

BRITISH MEDICAL ASSOCIATION.

Tuesday, August 31st.—12.00 a.m.—Service in the English Cathedral. 2.30 p.m.—Windsor Hall: Opening ceremonies and addresses of welcome. 3.00 p.m.—Address by the President-Elect, T. G. Roddick, M.D., M.P. 4.00 p.m.—Garden Parties, Excursions, around the Mountain, etc. 9.00 p.m.—Soirée at Laval University.

Wednesday, September 1st.—1.00 p.m.—McGill University: Opening of sections. 3.00 p.m.—Windsor Hall: Address in Medicine, by Dr. Wm. Osler. 4.00 p.m.—Excursion down the St. Lawrence, etc. 9.00 p.m.—Sohmer Park: Conversazione and Dance.

Thursday, September 2nd.—9.30 a.m.—McGill University: Sectional meetings. 1.30 p.m.—Lunch on the Mountain. 3.30 p.m.—Windsor Hall: Address in Surgery, by Mr. T. Mitchell Banks. 4.30 p.m.—Excursion across the Island, etc. 7.45 p.m.—Annual Dinner of the Association, Windsor Hall.

Friday, September 3rd.—9.30 a.m.—McGill University: Sectional Meetings. 3.00 p.m.—Windsor Hall: Address in Public Medicine, by —, and concluding General Meeting. 4.15 p.m.—Excursion to St. Anne's and down the Lachine Rapids. 9.00 p.m.—Soirée at McGill University.

Saturday, September 4th.—Excursions to Ottawa, Quebec, Kingston, St. Agathe, Lake Memphremagog, etc.

ARRANGEMENTS FOR AND OPPORTUNITIES AFFORDED TO GUESTS OF THE ASSOCIATION.

American guests attending the meeting of the Association, will, it is trusted, be accorded by the Railway Companies the same privileges as are granted in the case of other large Scientific meetings upon this continent, namely, they will be enabled to obtain the ticket to Montreal and return at the rate of one fare and one-third, a rebate being given in Montreal upon presentation of the return ticket.

In Canada they will have the same privileges granted to them by the Grand Trunk and the Canadian Pacific Railways as are accorded to the members of the Association, namely, they will be able to travel to nearly all parts of the Dominion, from Halifax on the one hand, to Victoria, B.C., on the other, at half rates for the single journey, and single rates for the return journey.

During the meeting there will be several afternoon excursions in the neighborhood of Montreal, given to them by the Montreal Branch of the Association.

Fuller particulars as to excursions will be afforded at a later date.

Guests of the Association may be invited by the Presidents and Officers of the various sections to contribute papers and to take part in the discussions at the sectional meetings.

For the convenience of those attending, a suite of rooms will be placed at the disposal of the guests, for enregistration, distribution of tickets, etc.

Personals.

Dr. Maud E. Abbott (M.D. Bishop's, 1894), who ever since graduation has been in Europe, on the 8th April passed her examination in Edinburgh for the triple qualification.

Dr. Benny (M.D. Bishop's, 1896) is still in Prince Edward Island *locum tenem* for Dr. Macphail, who is in Europe.

Dr. Fortin (M.D. Bishop's, 1897) has been appointed House Surgeon to the Western Hospital.

Dr. Irvin (M.D. McGill, 1896) continues another year as House Physician to the Western Hospital.

Dr. Grace Ritchie (M.D. Bishop's, 1891), Montreal, was married early this month to Dr. F. R. England (M.D. Bishop's, 1885). They at once proceeded to Europe on their honeymoon, and will be absent about six months.

Dr. Hall (M.D. Bishop's, 1896), late House Surgeon Western Hospital, will in a few weeks proceed to Europe to further pursue his studies.

Dr. G. T. Ross, Professor of Laryngology and Rhinology in Bishop's College, who has been seriously ill, has quite recovered, and has resumed work. This will be gratifying news to his many friends.

Dr. Montgomery (B.A., M.D. Bishop's, 1894) has removed from Farnham to St. Johns, Que., where he is rapidly getting a good practice.

Dr. N. C. Smillie (M.D. Bishop's, 1881), of Gaspé Village, will pay Montreal a visit very shortly.

Dr. C. A. Wood (M.D. Bishop's, 1877), of Chicago, is Chairman of the Committee for the United States, charged with the duty of arranging an excursion of Medical men to the Medical Congress which meets in Moscow this summer.

Dr. C. C. Brymer (M.D. Bishop's, 1895) has commenced practice at Point St. Charles, Montreal.

Miss Dr. Cunin (M.D. Bishop's, 1895) has commenced practice at Point St. Charles, Montreal.

Dr. Antonio Internoscia (M.D. Bishop's, 1895) is practising in New York city.

Dr. Foley (M.D. Bishop's, 1880) and Dr. Jack (M.D. Bishop's, 1889) are the only Dermatologists—special—in Montreal.

Dr. Douglas Macrae (M.D. Bishop's, 1893) is a Surgeon on one of the Red Line Steamships sailing between Philadelphia and Liverpool.

Dr. Purvis (M.D. Bishop's, 1892) is practising successfully at Athens, Ont.

The Hon. Dr. F. W. Borden, Minister of Militia, is slowly recovering from the results of the railroad accident which occurred some three months ago on the Intercolonial. He is at present in Boston undergoing treatment. His many friends will rejoice to see him again able to resume his Ministerial duties, for he is admittedly the best Minister the Militia Dept. has perhaps ever had.

Dr. Bazin (M.D. McGill, 1893) has resigned the position of Medical Superintendent of the Montreal General Hospital to enter upon practice in Montreal.

Book Reviews.

A System of Practical Medicine. By American Authors. Edited by Alfred Lee Loomis, M.D., Late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine in the New York University. To be completed in four imperial octavo volumes, containing from 900 to 1000 pages each, fully illustrated in colors and in black. Vol. I.—Infectious Diseases. Just ready. Vol. II.—Diseases of the Respiratory and Circulatory Systems, and of the Blood and Kidneys. In Press. Vol. III.—Diseases of the Digestive System, of the Liver, Spleen, Pancreas and other Glands, Gout, Rheumatism, Diabetes and other Constitutional Diseases. In active preparation. Vol. IV.—Diseases of the Nervous System and of the Muscles. Diseases of doubtful origin, Insolation, Addison's Disease, etc. In active preparation. Per volume, cloth, \$5.00; leather, \$6.00; half morocco, \$7.00. Lea Brothers & Co., Publishers, Philadelphia and New York. McAinsh & Kilgour, Dominion Agents, 15 St. John Street., Montreal, 12 Confederation Life Building, Toronto.

The first volume of this new System of Medicine is to hand, and at a glance one is impressed that it is a work of unusual merit. It aims to be a thoroughly practical work of ready reference for the practitioners of general medicine. It is not a mere compilation, as

original investigations expressly for the work have been undertaken by the various authors which are evident in text and illustrations. The latter are striking features, and one rarely sees finer colored plates than those of the malaria parasite, dysenteric amoebae and vaccinia on the tenth day.

The following gentlemen constitute the list of contributors to this volume: Drs. I. E. Atkinson, Baltimore; John M. Byron, New York; Warren Coleman, New York; George Dock, Ann Arbor, Mich.; Alvah H. Doty, New York; Iradan Dyer, New Orleans; J. P. Crozier Griffith, Philadelphia; Martin B. James, New York; Thomas S. Latimer, Baltimore; William Osler, Baltimore; William Walluck Park, New York; P. Gervais Robinson, St. Louis; Wm. Francis Robinson, Chicago; George M. Sternberg, Washington; James Stewart, Montreal; Wm. Sydney Thayers, Baltimore; Wm. H. Welch, Baltimore; Wm. M. Welch, Philadelphia; Hamilton Atchison, West Galveston, Texas; James C. Wilson, Philadelphia. The infectious diseases are considered in this volume, and as the greatest advances have been made in this class of cases, it represents in its nine hundred and fifty pages much of the results of modern bacteriological investigations. No special general article appears, but in each disease where the cause is known a detailed account appears in regard to the bacteriology or parasitology. The article on diphtheria represents our present knowledge of all relating to the Klebs Loeffler bacillus from its discovery by Klebs in 1883, to the most recent points in regard to antitoxin. The characteristics of the bacillus when cultured on various media, collection of blood serum, preparing cultures, the microscopical examination of the exudate, and cultures for diagnosis, etc., are fully considered. In the first article on malaria there is much interesting reading, there are one hundred and fifty-four pages; a condensed review is given of the history of this disease and its parasitology. Laveran's discovery of the plasmodium malariae is fully described, and the confirmation of his discoveries by others, its zoological position, the methods of investigation and general morphology and biology are detailed and illustrated. Then follows a section on classification, in which it is concluded that three varieties exist, that of quartan fever, tertian and aestivo autumnal; the latter group, it is admitted, may comprise varieties which will hereafter be satisfactorily differentiated from each other. The differential diagnosis of the varieties, the internal structures of the parasite, phagocytism, pathogenesis, similar haematozoa in the lower animals are the titles of other sections, then follow: etiology, pathological anatomy, symptoms, diagnosis and treatment. The subject of treatment in all the articles is especially full and detailed, and constitutes a prominent and useful feature of this work, and one that will commend it as a guide and work of reference for the every day wants of the general practitioner. This is especially apparent in the articles on Typhoid, Diphtheria, Syphilis and Tuberculosis.

The index is very full, enhancing its value to the busy consultant; it is well printed and bound, the style being similar to Dennis' System of Surgery, by the same publishers. The various articles being written by different authors, each bears the impress of its writer, who in each instance is regarded as being specially qualified by experience and investigations for giving a thoroughly

comprehensive elucidation of the disease under consideration. No one who desires a system of medicine can make a mistake in purchasing this latest representative, as it portrays, as far as the subjects considered in this volume are concerned, in a clear and concise manner our complete knowledge of these diseases as it exists to-day and from an American standpoint.

The Diseases of the Stomach.—By Dr. C. A. Ewald, Extraordinary Professor of Medicine at the University of Berlin. Director of the Augusta Horjetatte. Translated and edited with numerous additions from the third German edition by Morris Manges, A.M., M.D., assistant visiting physician to Mount Sinai Hospital; Lecturer on General Medicine at the New York Polyclinic. Second revised edition. D. Appleton & Co., New York, 1897. Geo. N. Morang, publisher's agent, Temple Building, St. James St., Montreal.

Ewald's *Diseases of the Stomach* has been, since the first edition appeared in 1892, the highest authority available to practitioners for reference and study. The present edition is the second English translation from the third German edition, which was published in 1893. Dr. Manges has, besides giving a true translation of Dr. Ewald's book, endeavored to add all that is new up to the present year, and some thirteen cuts exist which are not in the German edition.

Ewald in the last edition found it necessary but seldom to alter the opinions held in his first editions, and warns the reader not to be too dependent on the results to be obtained by the modern chemical methods, but rather to take into complete consideration all the symptoms and all the diagnostic resources available.

There are six hundred pages, forty-six illustrations, and the subject matter is included in twelve chapters, and discussing the subject in the following order: Methods of examination, stenosis and strictures, the various forms of gastritis, dilatation, cancer, ulcer, the neurosis and the correlation of the diseases of the stomach to those of other organs.

The stomach tube, which has been the means of introducing the new era in investigating diseases of the stomach, it is stated, was first used in 1829, and in 1659 a stomach brush was used which has its modern representative in Türck's gyromele which is here fully described. The first chapter is one of the most interesting in the book, dealing with all the methods of examination. Here is considered the method of using the stomach tube, aspiration and expression, test meals, examination of stomach contents, tests for acidity, determination of the digestion of albumen and starch. One is struck by the amount of new information that has been added by the translators, and without which the work would not maintain its position as representing our latest knowledge. Although many of the paragraphs inserted are simply confirmatory of the text, yet many new practical points and correction of old views are here recorded, such as the inutility of the potassium iodide test for demonstrating absorption and the views now obtaining that the stomach is rather a receptacle for food than a region where absorption is active, and that this power of the stomach has hitherto been much overestimated. The salol tests are stated by the translators to be too unreli-

able in determining the motility of the stomach, and Leube's is the best method.

Dehio's method for determining the size of the stomach is the best means for ascertaining the tone of the muscular fibres, and he also criticizes Einhorn's gastograph and Hemmeter's intra gastric bags.

The physical methods of examination are then described, palpation, distension of stomach with gas, air and water. Einhorn's gastrodiaephane is described, and the method of using it explained. The technique of the treatment of stomach diseases is then discussed, and the methods of syphonage of the stomach, the translator describing among new devices Hemmeter's recurrent tube and Túrck's pneumatic force irrigator.

In each special disease the methods of diagnosis are minutely described.

The book is a mine of knowledge on everything that pertains to morbid conditions of the stomach and their management, and easily takes the first place as our standard work of reference in diseases of this viscus. It represents the life work of one who his more than any other in this field made the medical world his debtor, and the translator has ably supplemented this work by the valuable compilation of recent advances added.

The Year-Book of Treatment for 1897.—A critical review for Practitioners of Medicine and Surgery. Crown octavo, 488 pages. Cloth, \$1.50. Philadelphia and New York. Lea Brothers & Co., 1897.

This Year-Book is one of the most useful of the many annual reviews which are now available to the general practitioner. It is supplied at a very low price, and contains an epitome of all that has been found during the year to be improvements and additions to our methods of treating disease in all the various branches of medicine, including medicine, surgery, obstetrics, gynæcology, diseases of the skin, eye, ear, nose and throat, tropical diseases, public health and hygiene, and medical jurisprudence, and at the end is a summary of the therapeutics for the year 1896.

The contributors are mostly British, twenty-six in number, each in charge of a department. Among the list are the names of Sydney Copland, A. E. Garrod, M. Hannaford Jones, Reginald Harrison, Malcolm Morris, W. J. Walsham, W. Hale White, Sydney Phillips, St. Clair Thompson. All able to write authoritatively on the subjects of their department. The review of the year's advances is condensed and critical, giving the author's personal views on each new method, drug, or therapeutic suggestion. The book is thoroughly classified and arranged for ready reference with a full index. The four hundred and eighty pages teem with valuable extracts and suggestions for treatment from the most reputable writers throughout the world. We find in this volume a very interesting and full résumé of the Schott treatment of heart disease by baths, saline and effervescing and special exercises. The methods, rationale, criticisms, and general considerations of the Nauheim treatment makes very instructive reading. In the department of diseases of the lungs is a full résumé of the progress of the serum treatment of tuberculosis after Maragliano's method. Also a review of the surgical

treatment of tuberculosis. On the treatment of nervous and mental diseases, we find a full résumé of lumbar puncture and the use of animal extracts in insanity. In the next section we find considered operation on typhoid fever with perforation, lavage, the treatment of Glenard's disease by abdominal section. Further on, strontium lactate in nephritis, uranium nitrate in diabetes mellitus, how to distinguish diabetic from non-diabetic blood, the treatment of uric acid concretions, dangers and secondary effects of antitoxin, Pasteurization and modification of milk, local anæsthesia according to Schleich, new chloroform inhaler illustrated, surgery of the thyroid, surgical treatment of tubercular glands, treatment of gonorrhœa by argonin, potassium permanganate and formalin, intra-uterine photography, symphysiotomy, streptococcus antitoxin in the treatment of puerperal septicæmia, and hundreds of other references, which makes the book invaluable to one who desires to keep apace with the advance which is being made in all departments of therapeutics.

Lectures on Appendicitis and Notes on other Subjects.—By Robt. T. Morris, A.M., M.D. Second edition, 169 pages, 1897. G. P. Putnam's Sons, New York.

The first four chapters of this book are taken up with a comprehensive discussion of Appendicitis under the following headings: "Preparation of Surgeon and Patient," "The Appendix Vermiformis Ceci," "Appendicitis" and "Surgical Treatment of Appendicitis."

In the opening chapter are many valuable hints with regard to surgical technique which show much careful thought and observation. The second chapter discusses the appendix and contents, while the third deals very fully with the pathological condition of the appendix, and is profusely illustrated with excellent cuts. After discussing carefully the surgical treatment, he reviews carefully a hundred cases, criticizing the cases in which death occurred, and drawing valuable lessons from them.

The fifth and last chapter is composed of a collection of notes on various surgical subjects principally pertaining to abdominal work. Most of these are out of the beaten track, and show much thought followed up by experimentation on the lower animals where practicable. This work is of much value to both practitioner and student.

Assays and Addresses.—By Sir J. Russell Reynolds, Bart., F.R.S., M.D. Lond., LL.D. Edin., LL.D. Aberd. President of the Royal College of Physicians of London, President of the British Medical Association, Physician to Her Majesty's Household, and Consulting Physician to University College Hospital. MacMillan & Co., Limited, London. The MacMillan Co., New York, 1896. Agents: The Copp Clark Co., Ltd., Publishers, 9 Front St. West, Toronto.

These essays and addresses are published in a neat volume of 307 pages, by his wife, Frances Russell Reynolds. They are only representations of a larger number of papers which Sir Russell Reynolds intended publishing when they were more complete. A sketch of his life is given, written by his private secretary, which is well written and of exceeding interest, illustrating the upward pro-

gress of a man endowed to begin with by uncommon natural ability, and by industry and concentrated attention mounting from pinnacle to pinnacle until every honor that his imagination could aspire to in a medical career had been conferred upon him. Then follow thirteen lectures and addresses delivered at various times between 1858 and 1895; during the latter year he was President of the British Medical Association, and his presidential address on the organized progress of medicine is a masterly effort. Other papers of interest are: The Facts and Laws of Life, the Types of Students, the Definition and Nomenclature of Disease, Specialism in Medicine, the Harveian Oration 1884, the Value of Competition, Sanitary Science and Preventive Medicine, etc.

These themes are all ably discussed, and contain the results of years of thought and research, and the views and experience of one who for nearly half a century was a leader of medical thought.

Appearing in less than a year since his death, these valuable essays should be widely circulated; such a result will keep his memory fresh among all who honor true greatness, will be a small token of respect for his name, and the possessor of the book will have a work rich with the choicest gems of thought and wisdom.

PUBLISHERS' DEPARTMENT.

"Is there danger of the plague being imported to this country?" "Yes," Prof. Victor C. Vaughan answers in the May number of *Appletons' Popular Science Monthly*, "there is danger; but this, being foreseen, may be easily avoided." No effective treatment of the disease, however, which is a septicæmia, is known. Prof. Vaughan's whole article is a valuable contribution to the knowledge which the public is seeking of this fearful disease.

EX-PRESIDENT HARRISON'S SUCCESS AS AN AUTHOR.

Ex-President Harrison will conclude his series of papers on life in the White House in the May *Ladies' Home Journal*, and take a respite from his literary labors which have so profitably and congenially occupied him for more than a year. General Harrison is the first President to show the public through the White House, "upstairs, downstairs," etc., and to detail the President's daily routine, and the social and domestic phases of life in the Executive Mansion. He is also the first Chief Magistrate to crystallize his knowledge and the experience gained as Chief Executive in a series of lucid, instructive and interesting magazine articles on the functions of our government, such as were "This Country of Ours" papers.

SANMETTO IN BRIGHT'S DISEASE.

I have been using Sanmetto in my practice for two years or more, and am nearly always well pleased with its effects. Have had splendid success with it in Bright's disease, sometimes using it alone and at other times in connection with digitalis.

SHELL, ALA.

H. GREEN, M.D.

DIABETES WITH PAINFUL MICTURITION.

It is with the greatest pleasure that I report the good results from the use of Sanmetto upon myself. I have been a sufferer for five months from diabetes, with great pain just before passing my water. From the use of two and one-half bottles of Sanmetto, the pain was removed and the inflammation checked. I have prescribed Sanmetto several times since, and shall continue to do so.

HILL, N.H.

J. N. STOREY, M.D.

A PHYSICIAN AND HIS PATIENT IMPOSED UPON BY A DRUGGIST'S SUBSTITUTION.

I gave Sanmetto to Mrs. H., aged twenty-eight years, for frequent micturition and tenderness in region of kidneys. Patient was compelled to rise four or five times during the night, passing nearly a half gallon of urine during this time. After using a bottle of Sanmetto she was greatly relieved, but instead of getting more Sanmetto as I directed, patient was induced by her druggist to get a preparation of Palmetto; this had no appreciable effect whatever. Patient is now using Sanmetto, and is not likely to be imposed upon again.

CROSS, OKLA. T.

W. OCELLUS HARTSHORNE, M.D.

BLOND AND BRUNETTE IN EUROPE.

In a rough way, the extremes in the distribution of the blond and brunette varieties within the population of Europe are as follows: At the northern limit we find that about one-third of the people are pure blondes, characterized by light hair and blue eyes; about one-tenth are pure brunettes; the remainder, over one-half, being mixed with a tendency to blondness. On the other hand, in the south of Italy, the pure blondes have almost entirely disappeared. About one-half the population are pure brunettes, with deep brown or black hair, and eyes of a corresponding shade; and the other half is mixed, with a tendency to brunetteness. The half-and-half line seems to lie about where it ought, not far from the Alps. Yet it does not follow the parallels of latitude. A circle, described with Copenhagen as a center, sweeping around near Vienna, across the middle of Switzerland, thence up through the British Isles, might serve roughly to indicate such a boundary. North of it blondness prevails, although always with an appreciable percentage of pure brunettes. South of it brunetteness finally dominates quite exclusively. It should not fail of note that toward the east there is a slight though constant increase of brunetteness along the same degrees of latitude, and that the western portion of the British Isles is a northern outpost of the brunette type.

Thus we see at a glance that there is a gradual though constant increase in the proportion of dark eyes and hair from north to south. There are none of those sharp contrasts which appeared upon our map showing the distribution of the long and broad heads in Europe. On that map the extremes were separated by only half a continent in either direction from the Alps; whereas in this case the change from dark to light covers the whole extent of the continent. It is as if a blending wash had been spread over the map of head form, toning down all its sharp racial division lines. —Prof. WM. Z. RIPLEY in *Appletons' Popular Science Monthly* for April.

A DESERVED EUROPEAN INDORSEMENT.

Health, a weekly journal of medicine and surgery, diet and sanitary science, London, Eng., says editorially:—"We have received from The Antikamnia Chemical Company, St. Louis, Mo., U.S.A., a brochure dealing with the action, history, indications and administration of their preparation, antikamnia. There is no remedy so useful and attended with such satisfactory results in the treatment of melancholia with vaso-motor disturbances, anæmic headaches, emotional distress, and active delusions of apprehension and distrust; and it also increases the appetite and arterial tension, and promotes digestion, as well as being particularly serviceable in relieving the persistent headache which accompanies nervousness.

"In neurasthenia, in mild hysteroid affections, in the various neuralgias, particularly ovarian, and in the nervous tremor so often seen in confirmed drunkards, it is of peculiar service. In angina pectoris this drug has a beneficial action; it relieves the pain and distress in many cases, even when amyl nitrite and nitro-glycerine have failed entirely. In pseudo-angina frequently observed in hysterical women, its action is all that can be desired.

"To patients who suffer from irritable or weak heart, needing at times a pain reliever, it can be taken without untoward after-effects, knowing that the heart is being fortified. It increases the elimination of urea and purifies the blood without increasing the destructive tissue metamorphosis. It lessens coma and loud delirium by contracting the capillaries of the brain. In delirium tremens, it relieves when there is great restlessness with insomnia, as well as general lowering of the nervous power."

THE ARENA.

EDITED BY JOHN CLARK RIDPATH, LL.D., APRIL, 1897.

The Problem of Municipal Reform, Hon. H. S. Pingree, Governor of Michigan and Mayor of Detroit, Michigan. The Doorway of Reforms: Eltweed Pomeroy. Italian Immigrants in Boston, Frederick A. Bushée. The Priesthood of Art, Stinson Jarvis. The Catholic Question in Canada: 1. A Struggle for Freedom, F. Clement Brown, M.A.; 2. The Index Ex-purgatorius in Quebec, Geo. Stewart, D.C.L. Lincoln and the Matson Negroes, Jesse W. Weik. Abraham Lincoln, a poem, Franc Remington. The Nina Arcadia, Gertrude G. de Aguirre. Co-education in Secondary Schools and Colleges, May Wright Sewall, Ex-President of National Council of Women, etc. The Scripture-Errancy Conflict, Benjamin F. Burnham. The Past and the Future of the American Negro, D. W. Culp, A.M., M.D. Claims of Spiritualism upon Christianity, Rev. T. E. Allen. Development of Naturalization Laws, Clifford S. Walton of the Washington Bar. The Man in History, John Clark Ridpath. The Urgent Need of our Pacific Coast States, Edward Berwick. The Editor's Evening. Book Reviews: Once more "The Alhambra"; A new book on Darwin; Mr. Bryan's Book.

AN ACROSTIC—LA GRIPPE.

A-ll the nerves gone on a bender,
 N-ot an organ is exempt,
 T-eeth and scalp and muscles tender,
 I-cy chills, the bones pre-empt;
 K-aleidoscopic are the symptoms legion,
 A-s they over-run the system,
 M-aking life a weary region,
 N-o one able to resist them.
 I-s there nothing that will cure?
 A-ntikamnia will, I'm sure!

ATLANTA, GA.

FREDERICK B. SUTTON, M.D.