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DELIVERED TO THE GRADUATES IN MEDICINE OF MCGILL
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BY WESLEY MILLS, M.A., M.D., L.R.C.P., LOND.,
Professor of Physiology, McGill University, Montreal.

Gentlemen, Graduates in Medicine :

Some of my colleagues, with more confidence in my power of rapid preparation than I have myself, suggested that I should avail of this occasion to speak of the achievements and character of our late Dean. But when one has, within a few days, read one thousand pages of foolscap in the form of examination papers, and finds several hundred more confronting him, he is not worth much for any high undertaking.

Canada's greatest physician—the "grand old man" of the medical profession in this country—has passed away! Would that I could speak of him worthily, but the task is too mighty for me! But even were I competent, there are strong personal reasons which would render it impossible. A friendship beginning in profound respect on my part when I had the privilege as a student of sitting under the magnificent lectures of the late Professor of Medicine, and feeling the ennobling influence of the man; and on his part, the fancied or real discovery in me of—I know not what,—a friendship deepening with the rolling years has suddenly been dissolved.

When, in 1881, after being abroad, I settled in this city and began my career as a very subordinate and almost unrecognized teacher in McGill University, one man in the Medical

Faculty extended to me great encouragement. That man was the late Dr. Howard.

When, again, in 1884, after a more prolonged absence abroad, I took the bold, perhaps rash step, and certainly one unprecedented in this country, of wholly relinquishing medical practice for the teaching and culture of the department of Animal Physiology, amid much hesitation, indifference and lack of confidence, again one man with an insight into the importance of this subject for medicine, given to few, wavered not, but from the first supported both the subject and the teacher with that gigantic moral strength which I felt "like the shadow of a great rock in a weary land." No one in Canada has, directly or indirectly, so encouraged Physiology as the man that I venture to think will be known in future as McGill's great medical Dean.

But Robert Palmer Howard is gone!

I suffer from temporary discouragement and a feeling of apprehension for the future. A king may arise that knows not Joseph. I am overwhelmed with a sense of personal loss, loss to medicine, to the University, and to my own subject.

You will therefore understand why, were I worthy of such a theme, my feelings, so near are we to this recent awful bereavement, are not under sufficient control to warrant me in undertaking its treatment; and this is my reason for these personal references, which, inasmuch as they explain my course to-day, I hope you will pardon.

I shall therefore deliver the address I had prepared, and which was in type before the late Dean's illness began; and if I tax your patience somewhat by references to matters that I deem of great importance, I think I may at least assure you that my remarks will not be of the nature of an oft-told tale.

Each of you is to-day like one who has been walking in a long but narrow avenue, bounded on each side by pleasant, though not greatly varied, scenery, stimulated to maintain a certain rather rapid pace by his leaders and fellow-travellers, and who, all of a sudden, finds himself about to part from those he has pleasurably accompanied. The avenue opens out into a boundless expanse, neither the nature nor the extent of which

he knows. It is uncertain in how far he may either understand or be understood by the great crowd wending its way by different paths across this great area.

Such is the college—such is the world. To drop the figure, you have now closed a busy but somewhat narrow mode of life, and are about to enter on one incomparably wider in all respects. I think too well of you to believe that any one of your number quits the scene of four years of the most important, and not the least pleasant, part of his life's drama without a feeling akin to fond regret; or that he looks out upon the unknown future without a certain degree of anxiety and a sense of manhood's responsibilities, however hopeful he may be by nature, however keen his anticipations of success or bright his prospects.

It is a fact too little realized that we can never get rid of our past. We do to-day, each one of us, represent most accurately the past that belongs to ourselves and our ancestors, as we are determining hourly the character of posterity.

It follows, then, that, however your fortunes may vary, you must ever owe filial gratitude to your *Alma Mater*. The University has aimed to send you forth armed for the battle of life; and though she may have erred somewhat in her methods, you must give her credit for the best of motives.

This aspect of the subject has been discussed frequently, and I shall therefore for a brief space ask your attention to a few thoughts on the relations you sustain to the University by virtue of the fact that you are now a part—a very important part of the University herself. As undergraduates you could chiefly help the University by conforming to her regulations cheerfully and acquitting yourself to the best of your ability in the pursuit of your studies. Now, however, the day of pupilage is past, and you probably scarcely realize that you are not only each a reflector that should radiate the better light of university culture, but that you are now entitled to a voice in the government of the University. You are now at liberty to express your opinions on university matters, not only through the ordinary channels open to every one in a really free country, but also through the Graduates Society or any branches of it that may be formed. You

are represented on the corporation of McGill most directly by the Representative Fellows, in the election of whom every graduate may cast his vote. And allow me, gentlemen, to suggest to you the desirability of at once, before you leave the city, complying with those conditions to be observed in order that you may be able, without further trouble, to vote annually for Representative Fellows.

On the one hand it is the plain duty of the University to place within the reach of all her graduates sources of the fullest information in reference to all her affairs; and it is equally your duty to give such information the most careful consideration. Remember that the time is past, if it ever existed, when the entire interests of a great university can be safely trusted to any one man or any dozen men, however great their ability or however pure their motives. The government of universities by an autocracy of any kind is directly opposed to the spirit of the age. Not that the great multitude should express itself directly in the councils of the highest centre of learning; but I do maintain that the echoes of the humblest village school-room should be heard and regarded by the powers that more directly guide the university ship; and you, gentlemen, may be the only medium, possibly, through which these significant echoes may reach the centres of university life. If after the best study you can give to the affairs of your *Alma Mater* you are convinced that all is as well as it may be, then support the University methods heartily; but if, again, you feel the contrary, agitate through the mouth-pieces, the University's constitution provides the changes you are convinced should be made. If the Elective Fellows are not sufficiently numerous, see that their number is increased. As soon as any of them lose their usefulness—become mere gilded men of wood, remove them, and replace them by vital organisms.

I do not think the Representative Fellows should always be chosen from Montreal. The corporation should so arrange its meetings that gentlemen from a distance might attend, and their expenses should be paid. Let us have the best men wherever they are to be found.

It is not well with a university when its graduates do not take a deep interest in her affairs ; but this can never, in my opinion, be realized until this important body has the fullest reason for the belief that its representations will receive due consideration. Gentlemen, it is your duty, as well as that of all graduates, to see to this.

Modern Botany has made us familiar with the fact that, though the greater part of a tree is made up of structures now dead or possessed of a very low vitality, throughout the really growing part there is a continuity of the essential protoplasm. Without pushing the comparison too far, may I not truthfully state that the graduates largely represent in the University the essential growing part, the part that most readily adapts to the environment? A university needs, as a tree, the supporting structures, which may be said to represent the conservative element. But it may have these and neither grow nor adapt. It may have these and gradually decay. Let me remind those that may be inclined to despise the importance of the youthful element in university affairs that life—all life—implies *constant* adaptation and ceaseless change. It is either change and progress or it is stagnation and death. With the life of a cell or the life of a university, it is the same—change, change, slow or rapid as the surroundings demand. The time when any man feels like saying “ Now all is well, now I will rest,” marks the epoch of commencing senility, arrest of progress, decay ; and this period seems to be reached by some men fearfully soon. With some it began before they were born. The same holds for a university.

When, gentlemen, I had the pleasure of meeting you in my own lecture-room, you may remember that I occasionally referred, with a view of stimulating you with a glimpse of a grand future, to the great change that is coming over every department of medicine. We are in the midst of a period of unequalled progress. Changes of the most profound character are taking place in medicine as an art and especially as a science. Call it a revolution or an evolution as you will, it is coming—aye, it has come ; and happy are they that realize it ! I have always maintained

that until the medical profession comprehends that medicine is a branch of Biology it will never perceive its true relations to the study and the practice of the healing art.

Once be convinced of this, and radical changes in the methods of teaching in medical schools must follow. Perhaps no institutions are so full of educational anomalies as medical colleges. This is owing, as an ultimate cause, to this failure to perceive the real nature of medical study, which was impossible till the recent great strides in biology had been taken. Hence it happened that professors were chosen from among the great mass of medical practitioners quite irrespective of any inborn or acquired ability to teach. As the faculties of medical schools often filled the vacancies in their ranks without being responsible to any other body, it is easy enough to understand that men should be chosen because they were respectable in the community and agreeable to the members of the faculty; and perhaps for no other good reason.

On this continent a few of the more advanced schools rank among their numbers one, two or three teachers that are devoting the whole of their time to their professorial duties. These men are allowed the same college status as their colleagues; they enjoy a sufficiently small stipend; and they mostly find, although they may spend the whole of their energies on their specialties and the study of educational problems, that no more weight is attached to their opinions than those of their colleagues who may be so occupied with the cares of medical practice that they have not an hour to give to any problem, educational or other, outside of the crowding round of their professional duties. Hence progress is slow. The day of great things is at hand, but how many see it not! If anything in education needs reforming altogether, it is the methods of medical education. From the beginning to the end of a medical course real knowledge can only be gained by the direct use of the senses, hence laboratory work of all kinds, in which I would include that of the dissecting-room (morphological laboratory) and the hospital wards, must largely occupy the student. As soon as didactic lectures, instead of helping a man to acquire knowledge for him-

self by observation, and to work up the facts into sound generalizations, load the mind with purely abstract conceptions, and hazy, ill-comprehended ideas, they become a positive injury and not a benefit. Is there a medical school in existence that can claim that correct methods are fully carried out? McGill is well to the front as compared with the best. But let us be candid. If I make to-day a few statements not of that laudatory character so common in this country, I hope I shall not be credited with less love for my own University or my own land than those who only boast of our present attainments.

A system that crowds so much work into four sessions; a system that expects so much at examinations; that keeps men listening to lectures of one hour each from 9 A.M. to 6 P.M., with the exception of a busy period of a couple of hours at the hospital and one hour for lunch, I do unhesitatingly declare an educational monstrosity and a fearful imposition on young, undeveloped natures. This is not the way to develop men, but to dwarf or distort them; and that our students are not more injured is evidence of the strength of their constitutions. No students work so hard and so cheerfully as medical students, and none are more handicapped by educational blundering.

Gentlemen graduates, I am sure you feel the truth of these remarks; you have groaned under the weight you have had to carry; and even the best men amongst you have felt it too heavy. You have been conscious of trying to keep in form for examination a vast mass of details which you have not digested nor even comprehended; and yet *you* have had greater advantages than most students in America for the acquisition of knowledge and for mental development in the right way.

The term I have just used, "development," raises a question I would urge with all the earnestness of which I am capable. Man has a complex organization, and any system of education that fails to develop all the parts of his nature harmoniously must be to a greater or less degree a failure. There are a few universities on this continent that look after the physical development of men wisely; a few others whose methods for the training of the *intellect* are to a large degree in harmony with

the best knowledge on that subject we possess. But where is the university anywhere in the world that harmoniously develops the whole man? Not one—absolutely not one! In all that relates to the social, the æsthetic, the moral, we are far behind. This is painfully evident in the medical course. A student is to a professor an intellect to be addressed—to be trained to a certain extent if you will, and to be very thoroughly examined periodically. The professor is to the student a statement-supplying mechanism, to be satisfied at examinations by a due return of the ideas furnished. Of all teachers a medical faculty should look to the body. But where is the medical school in which physical culture in the best sense is insisted upon? What provision is made to develop the social and moral, the highest parts of the man, and on which his future usefulness so much depends? In the winter evenings, if you pass near the theological colleges which flank McGill on each side, you may perhaps see the students partaking of their tea comfortably together. They evidently have both domestic comfort and social intercourse, and we are glad of it. Why should the Arts, the Science or the Medical student be turned out of his father's house to make his way as best he can in a large city without, in most instances, a single acquaintance at the outset? We have a fearful responsibility, I feel personally, and the hour is at hand when we must grapple with the problem! Among McGill's many wants, none seem to me so acute as the need of the embodiment of this principle of harmonious development of all the parts of the student's nature. McGill needs, on these grounds, a building which shall permit of the students of all the faculties meeting in a great dining hall and in the amusement and reading rooms, the apartments for physical culture, etc., with which it should be provided. Here the professors might mingle with their students—man to man. It would do both good. This requires money; but four hundred subscriptions of \$500 each would ensure the erection and furnishing of such a building. Are there not four hundred men in Montreal with enough patriotism and paternal feeling to subscribe the requisite amount? For the evils that beset our methods in the training of the

intellect of the medical student, the speediest and surest remedy would be a faculty composed of men devoting themselves, as is the case in medicine in some other countries, and in some of the other faculties of our own University, wholly to college work. Such a state of things implies endowed chairs, etc. Already on this continent there is one richly endowed medical school of the character indicated, gradually bursting into the vigor of a growth unwonted in the history of medical teaching on this side of the Atlantic. And McGill has reason to be proud that a graduate of her own (Prof. Osler) has been chosen as one of that carefully selected few that are to man and pilot the new ship. Where shall the next such school be? In the face of the magnificent endowments to this University of one great-hearted man; and to the citizens by himself and a fellow in grand and good works, of a noble bequest for the erection of an institution the usefulness of which all acknowledge,—in the face of these deeds by two of Montreal's citizens, who shall set bounds to the supply of means from the whole body of citizens, especially for what one of McGill's benefactors has called "*the essential profession?*"

The students that McGill has and cares to have are ready for the changes I have briefly sketched as desirable; in fact, many of her present students groaning under the impositions of the present are fondly looking for better days; though it may be they see but dimly in their youth and inexperience what should replace the present; but that there are some great changes devoutly to be wished is felt by the mass of the students but too keenly.

Gentlemen graduates, I am sure you participate in these views and feelings; hence I have thought it not an improper time to give utterance to them, believing that you will endeavor to hasten the day of better things, while still grateful for what you have received, and quite conscious that your own Alma Mater is not in the rear of the best of her neighbors. What I am trying to make clear is that *all* universities are behind; and that, as regards methods of intellectual training, medical schools are especially in need of great and speedy reforms.

But you are, perhaps, aware that one of the sources of embar-

rassment to the universities of this country just now is the result of the interference, either directly or indirectly, of professional bodies with their independent and largely irresponsible examining boards, which are not content with merely examining, but wish to dictate how students shall be taught. This latter is an entirely unjustifiable assumption of power. Those best qualified to judge of methods of training, etc., are those actually engaged in the work, and not, with all respect to them, the busy practitioners of the land destitute of experience in such work. That such men should be appointed examiners of students taught by specialists is at once a gross injustice to the universities and the students, as well as in itself an absurdity. Now, gentlemen, if within the next few years, or at any future time, you should be offered the position of examiner in some of the primary subjects on boards of such constitution, will you accept the position on the plea that if you do not some one equally unqualified will; or will you sacrifice for your university, your country and your convictions any temporary personal advantage? Prove yourself a moral vetebate and say, "No," as a protest against such anomalous practices. For my part I think your course is clear.

But you are under obligations to your country and your race of even greater importance than those you owe your Alma Mater, and I must not linger on your relations to the University. But before quitting this subject, you will, I am sure, join with me in one remark: That whatever changes may take place in the medical teaching of McGill University in the near or remote future, we do not hope to see in the members of her faculty men that will spare cheerfully more of their time and energy from their main work to their college duties than do my colleagues; nor that any future head of McGill Medical Faculty will embody in himself such a rare combination of professional ability, high sense of honor and justice, such integrity, such devotion in the interests of his profession and his university, or such rare ability as a lecturer, united with lofty aims and with an almost youthful enthusiasm, as did the late Dean.*

* This address was in type before the fatal illness of the late Dr. Howard began, and I have therefore allowed the above passage to stand as it was originally written, with the exception of two words.

Gentlemen, I must congratulate you on the prospects that loom up, to my eye clearly, before your chosen profession. Such is the progress of biology and allied branches, as chemistry, that within the next two decades, and certainly well within your lifetime, Medicine must be so transformed in every respect, and especially as a science, as to be scarcely recognizable. I have often thought that one of the best realizations that our profession could experience is the slight degree to which medicine has been a science at all until within the last ten years. And even as yet, witness the isolation of the various subjects in a medical curriculum, and the consequently increased difficulty in learning and the loss of energy from disconnected thinking which lasts beyond student-life and handicaps the practitioner all his days. Older literature is fast becoming shelved. The principles of Biology, vitalized by the great doctrines of organic evolution, will surely—let us hope speedily—like a ferment transform the whole. At present you hear little of biological principles outside of one or two lecture-rooms; but in less than twenty years they will dominate the teaching in every department, not excepting the hospital ward. Nor will it be in the form of crude, unverified statements, but as accurately ascertained facts. From what a height the teacher and practitioner of that day will survey the vast field! How much easier his classification of facts, how broad and how clear his principles!

I congratulate you on that unification and correlation which is taking place, notwithstanding old prejudices, in the different departments of medicine. Dental surgery and comparative, so-called, veterinary medicine, are being carried along on that same wave of progress on whose crest human medicine is riding. Until men perceived that disease was not an entity but a condition, varying with the organism affected, it was impossible to see the connection between the different branches of the science or to understand that as nature is one so must all science, including Medicine, when complete, be one. The dental and the veterinary surgeon and the practitioner of human medicine should no longer stand apart. The claims alike of science, our speechless companions and fellow-creatures the lower animals,

and of man himself, cry aloud to us all to unite our forces in the battle against disease, and to attain unto a better light and a broader knowledge. Gentlemen, it may be difficult for you who, in McGill, sit in the same lecture-rooms, work in the same laboratories, and pass the same examinations in the primary departments, as the students of veterinary and dental surgery, to understand why these branches of the profession and that you have chosen are not more closely united ; especially as now the interests of the public demand it, owing to the demonstrated communicability of disease from animals to man and the reverse. But there is a corporate and professional pride against which I would warn you. Beware of those that would seek to impregnate you with that which, like a calcifying process, arrests growth. Wherever you meet a professional brother, if he is good man and true, no matter whether veterinary or dental surgeon, or practitioner of human medicine, commune with him,—it will do you good and him good ; and if he is not a good man and true, seek better company, no matter by what name he may be called.

But there is an equally bright prospect before the great public. The profession and the public will alike realize that the great mission of the physician is to *prevent* disease. Families will be willing to pay to have their past physical histories studied ; they will take pains to preserve for the use of their posterity fuller and more accurate health-records than those to which they have been heir. The laws of heredity will be better understood and, let us hope, acted upon than now, owing to a quickened moral sense which will unquestionably result if our progress is real. The physician of that day will have a pleasanter career, because of less ignorance and prejudice to combat ; but he will require to be a better man in all respects than his representative of to-day. His knowledge will not be confined to what pertains strictly to his own profession, but he must, of necessity, be one of the best educated men in the whole community, particularly in science.

It may be that the pure scientist should rank intellectually above the physician of to-day ; but the future physician must be both.

Gentlemen, you leave us to-day well abreast of the knowledge of your time. But allow me to remind you that only the fleet runner can fully keep up in the race. Industry well directed, a mind free from prejudice, ever ready to entertain, though not necessarily to subscribe to, every new thing, will keep you in the safe path of progress. And begin at once this career. Never cease to be students of books, and, above all, of the book of Nature, ever open, yet sometimes hard to read. You will, of course, encourage all forms of learning and especially all departments of science, for no one can tell whence the next great advance may come. The limits set to an address of this kind prevents me referring to many matters of great importance in the details of your career as practitioners; but I think you must at some time during your student life have either heard or read advice on many of these subjects.

In this unresting age old things seem to be passing away and all things becoming new. Every man is a unit-force in the civilization of which he forms a part. He either retards or accelerates the car of progress. In addition to the physician's obligations as a preventer of disease by direct consultation with individuals and families, he owes a great duty to that portion of the human race that, from a multitude of causes, is unable to think out and work out its own salvation. What, then, is the duty of the profession to the great ignorant, degraded, comparatively helpless, mass of our fellows. According to some we are each to look to himself; each develop himself; and these people find a refuge for their selfishness under some ill-understood quotation, such as "The survival of the fittest." They would have us believe that their position is supported by the now no longer despised doctrines of evolution. Such views may harmonize with their "evolution," but not with that of the noble Darwin! Survival under a given environment is a mark of the fittest. But who make the environment for these unfortunates? In great part their fellow-men; and unless they make it as good as their light and opportunities permit they are unjust to their less fortunate brethren.

With all kinds of resource, whether of wealth, talent, learning

or ought else, comes an inalienable responsibility. We can no more get rid of it than of our being. The medical profession has, by virtue of special knowledge, a peculiar responsibility to their fellows both as a profession and as individuals. There are great evils at the very roots of human progress, understood adequately only by medical men, not to speak of their special knowledge of hygiene, by which they are eminently qualified to warn and direct the public. And unless the medical profession soon speaks out on some of these topics in language that cannot be misunderstood, surely the very stones will cry out!

We have all sorts of combinations in these days in the supposed interests of special classes. But who has yet heard of a meeting of capitalists with the direct object of devising means to alleviate the condition of their less fortunate fellow-creatures? Where or when have scientists or physicians met to decide upon plans of spreading the rays of a wholesome knowledge in noisome places? We may boast of our civilization as we will; but so long as there are, on the one hand, gross ignorance of essential truths by vast masses of mankind, squalor, poverty and all forms of degradation in our very midst; and on the other, massive fortunes, great ability, scientific knowledge and skill, all utilized for the benefit of the possessors only, all being perfectly content that things should so remain; and so far as the one side is concerned should increase, it seems to me that we have yet to learn the very elements of a high civilization. There may be those who can understand how a physician who does no more than go the rounds of his practice discharges his whole duty to his fellows. But on purely scientific grounds, if no other, I am unable to see how any man can be true to the potential nobility and greatness of his nature who allows himself to become and remain a mere diagnosing, prescription-writing mechanism, or a neuro-muscular mass co-ordinated to manipulate a scalpel or a saw! To be this only means the atrophy of the best part of man's nature.

If these doctrines seem new it is because they are so old. They are opposed neither to nature, nor science, nor the teachings of the great Nazarene. We pay unbounded homage to intellectual ability in our age. But though we admire the fox

for the cunning by which he secures his prey, or the shark for his teeth, we do not respect them for these endowments; and if so, why should we respect the man who, like the shark, uses his abilities to get the advantages in the race of life without reference to the results to others. I have never been able to understand it. I cannot respect such men. Such deference is a form of material worship, inherited from grosser ancestors, to be dominated as speedily as possible to higher principles.

Gentlemen, I address those remarks to you in the hope that you may not wait for older men to move; but that you may be induced, possibly, to initiate independent action yourselves on higher grounds than have been hitherto generally recognized. But should you do so, I cannot promise you that your equals or others will strew flowers in your path. You will probably be much misunderstood, and as a consequence you may be subjected to some of the many forms of refined persecution of our day. You may expect to be called an "extremist," a "visionary," a "dangerous radical," or perhaps a "crank," a term now often applied by stupid people to those they are incapable of understanding. But take your stand. You may live to see your dreams realized; but if not, you may enjoy the satisfaction of feeling that you have, in some degree at least, assisted in human progress.

Gentlemen, a word in regard to your relations to the schools of our land. If there is anyone who, by virtue of his education, his special knowledge, and his method of viewing things, is fitted to make one of a school board, it is the physician with a broad, liberal education. But how few of our profession occupy such a position. I think I am correct in stating that in the largest city in the Dominion not one physician has sat upon her school board for twenty years, although there has been a great plethora of the members of another learned profession. Your lot may be cast in a small place. The teacher, the preacher and yourself may be the sole representatives of the higher culture. Form a triumvirate for mutual help, and unite your forces in the cause of civilization. Drop into the school-room occasionally; speak a few encouraging words to the teacher. Make him see, if he

does not, that great destinies are in his hands ; smooth his often rugged path ; show the community that education, like all else that pertains to man, must be in harmony with the laws of his physical organization. It seems to me that your privileges and your obligations are, in this direction, great.

Finally, gentlemen, though men differ on this subject and on that, there is one on which all are agreed. Mankind, of whatever race, language, religion or place in the human scale, unite to respect and love the man that alleviates human suffering,—who prevents or wipes away the tear of pain, of bitterness, of repentance, or any form of misery.

Graduates in medicine of 1889, this is your privilege, a part of your noble mission to men. Go—go forth and discharge it. Farewell !

ON THE INTERCOMMUNICABILITY OF TUBERCULOSIS BETWEEN MANKIND AND THE DOMESTIC ANIMALS.

BY EDWARD PLAYTER, M.D., OTTAWA,
Editor "Canada Health Journal."

(Read at the meeting of the Ottawa Medico-Chirurgical Society, March 8, 1889.)

Of all the destroyers of human life, tuberculosis stands first. Evidently not less than at least 10,000 lives, and possibly 15,000, are destroyed by it in Canada alone every year. From one-sixth to one-tenth of all deaths almost everywhere are caused by tuberculosis, chiefly by that form of it best known as pulmonary consumption. The investigation of the cause and the source, then, of this most destructive agent is a subject of the very first importance, not only to this locality but to the country at large. As it is not my object to enter into the unhygienic conditions which give immediate rise to this disease—to suitable soil for its development; or, rather, which so depress the vitality as to enable the bacillus or its spores to take root in the human organism, develop, multiply and destroy life, I will now at once endeavor to lay before you some of the evidence which has been recorded to show that the disease may be, and probably frequently is, communicated to the human organism from domestic animals and more especially from cows.

About seven years ago at this present time, Mr. Veterinary-Surgeon Shaw, of the U. S. Bureau of Animal Industry at Washington, said, in the *U.S. Health Bulletin*:

"To-day, after ten years of experimental observations by Villeman, Viscar, Klebs, Zurn, Bollinger, Leisering, Chanveau, Bagg, Semmer, Guenther, Harms, Biffi, Virgad, Gerlach, Buhl, Tilbury, Fox, Burden, Sanderson, and a host of others, it has been definitely established (1) that the tuberculosis can be transmitted from animal to animal, from man to animals, and presumably from animals to man, by inoculation, or by the accidental contact of tuberculous matter with a raw or abraded surface; (2) that the raw tuberculous matter taken from man and animals and eaten by other animals may determine tuberculosis in the latter; (3) that even the flesh of tuberculous animals will some-

times produce tuberculosis in animals that consume it, though with less certainty than if the tubercle itself were taken ; (4) that the milk of tuberculous animals will at times produce tuberculosis in susceptible subjects, and above all where the morbid deposit has taken place in the udder ; (5) that cooking of the tuberculous matter gives no guarantee of protection, as flesh is a poor conductor of heat, and tubercle that had been boiled from a quarter to half an hour has readily infected a number of animals that partook of it ; and (6) that tubercle matter mixed with water and thrown into the air from an atomizer causes with great regularity the development of tubercles in the lungs of animals respiring such air."

Within the last seven years the subject has received a great deal of attention, and a great deal of scientific investigation has been the result.

The bacillary origin of tuberculosis, and the transmissibility of the disease from one individual of the human race to another individual, are points now universally admitted, and not doubted by any one, I believe, whom we can regard as an authority. The disease is the most common of all human diseases, except the ordinary infectious diseases of childhood, and the sources or vehicles of it must be proportionately common. What are they ? Dr. E. F. Brush, who is, I believe, connected with the Bureau of Animal Industry at Washington, and who, as he states, has long been compelled to devote his attention to the subject of diseases afflicting dairy stock, in a lengthy article in the *N. Y. Medical Journal*, in March of last year, on the question we are now considering, declared it as his " candid opinion " that tuberculosis " is all derived from the bovine race."

The human race is almost everywhere very closely associated with the cow. As Dr. Brush words it: " We are veritable parasites on this animal. We milk her as long as she will give milk, and we drink it ; then we kill her, eat her flesh, blood, and most of the viscera ; we skin her, and clothe ourselves with the skin ; we comb our hair with her horns, and fertilize our fields with her dung, while her calf furnishes us with vaccine virus for the prevention of smallpox."

Now the cow has tuberculosis and we have tuberculosis. If we regard her as a possible common centre of the infection, we have a reasonable and full explanation of the commonness of consumption. Where this animal does not exist, pulmonary consumption, it appears, is unknown. The inhabitants on the steppes of Russia, who have no cows, have domesticated the horse, using its milk, meat, and skin, and it is said a case of pulmonary tuberculosis has never been known to exist among them. The Esquimaux have no cows, neither have they pulmonary phthisis, and it appears to be a fact that where the dairy cow is unknown pulmonary consumption does not prevail. Evidence that a certain amount of relation exists between the death-rate of man and animals respectively from consumption, and that this relation is materially affected by the use of tuberculous flesh for human food, is afforded in a chart issued by the authorities of the Grand Duchy of Baden in the year 1881. The chart applies to fifty-two towns, and shows that where tuberculosis was prevalent among cattle it was proportionately prevalent amongst the human population, and was particularly prevalent in towns in which the number of low-class butchers were greatest. One remarkable exemption to this was found in the town of Wertheim; but it was significantly pointed out that from this town large quantities of sausages made from flesh of inferior quality were annually exported. Many observations of a like nature have been made in the United States; that is, that where tuberculosis is prevalent among cattle it is proportionately prevalent amongst the human population. At the Paris Congress on Tuberculosis in July last, Dr. Robinson of Constantinople, in a communication on "Consumption in Asia Minor," stated that, notwithstanding the fact that the inhabitants of this country lived much in the open air, the disease was very prevalent, and ten per cent. of his patients suffered from it. The natives recognized its contagiousness, and always destroyed all articles, etc., used by those suffering from it. The frequency of the disease, Dr. Robinson said, there could be no doubt, was owing to the free consumption of milk and of nearly raw flesh by the natives.

On the other hand, the Hebrews are exceptionally free from

tuberculosis, as we all know, and they exercise the greatest care in the inspection of the meat they consume. The lungs of all the animals destined for their food are examined, and in all cases where they cannot be fully inflated, or where there are adhesions of the pleura, the animals are rejected.

What are the conclusions we are almost forced to draw from these facts ?

I need hardly state here that tuberculosis in the bovine race, once known as the "pearl disease," is now universally regarded as being identical with the tubercular disease in man. Not only are the bacilli in the two cases indistinguishable under the microscope, but their growth in various culture media and their other biological characteristics are identical. The latest scientific evidence I have observed on this point is this : Dr. Woodhead and Prof. McFadyean last year examined six hundred cows in the Edinburgh dairies. Among other results of their investigations, Dr. Woodhead states that he found as great difference in size between the bacilli under the same cover-glass, from sputum of a tuberculosis patient, as he had found between bacilli taken from a cow and from a human subject, and he concluded that any differences there might be between the size, mode of growth, or position in the tissues of human and bovine tubercle bacilli was not sufficient to constitute a specific difference.

From our present degree of knowledge of comparative physiology, should we not naturally conclude that any parasite finding a favorable soil for its development in the cow or other domestic animal would find the soil of the human organism about equally favorable ; and *vice versa* ? The bacilli all appear to be very tenacious of life, and a difference of two or three degrees in the temperature of the different organic fluids they would doubtless readily reconcile themselves to, and likewise to any other such slight physiological or chemical differences existing between the internal structure or condition of the human body and that of these lower animals.

There is a large amount of the most conclusive evidence that the disease is communicable from man to the domestic animals. Besides a great many instances of observation, in which it was

plain that poultry had contracted well-marked tuberculosis from eating the sputa from the human lungs, the bacillus from human sputa has been, time and again, cultivated and inoculated into various animals, with the result of giving rise in them to unmistakable tubercular lesions. Bollinger, one of the first German authorities, has inoculated tuberculous matter obtained from man into the dog and produced typical miliary tuberculosis of the pleura, lungs, liver and spleen; and a great many experiments of a like character are upon record. But I will not dwell upon this settled point.

In the last number (March 2nd) of that conservative and cautious organ, the *New York Medical Journal*, the editor, Dr. Frank P. Foster, in an editorial on this very subject, says:—Fowls have become infected by the sputa of tubercular patients, and hogs by the milk of cows in which there was tubercular disease of the udder and teats; the transmission of pulmonary tuberculosis in man from one individual to another is undoubted, and, unless the bacillus tuberculosis is greatly modified in its passage through the lower animals, the danger of infection travelling from animals to man would seem to be very great.

Many classes of the feathered race, I may here observe, are very prone to this disease; especially the common fowl, pigeon, partridge and other grain-eating birds. Dr. T. W. Mills, Professor of Physiology, McGill University, at the last December meeting of the Montreal Medico-Chirurgical Society, exhibited specimens from a tuberculous pigeon, a white Jacobin, bred by himself, which had died two days previously. The bird had been ill only three weeks, and was fairly well-nourished at death. The tubercles were very widely distributed, the organs inflamed, and bound together by recent adhesions. Owing to enlargement of the organs and pressure, the apex of the heart was squeezed to such an extent that it must have become functionless. Dr. Mills stated that no doubt many birds offered for sale on the market were subjects of tuberculosis.

Now it may be argued that there is no direct proof of the transmission of tubercle from animals to man by the consumption of flesh and milk. "Such proof, it need scarcely be said,"

argues Prof. Walley of the Royal Veterinary College, Edinburgh, "cannot for manifest reasons be obtained, but the mass of indirect proof in favor of such supposition is enormous." But, he adds, very recently a most striking example of the effects of consuming the flesh of a tuberculous animal has been brought to light by a French physician in the case of a young woman who rapidly became consumptive as the result of eating the imperfectly cooked bodies of tuberculous fowls.

The flesh of tuberculous animals has evidently been suspected as dangerous from the earliest records. On the authority of Lydtin, Fleming, and Van Herten, there existed in the Mosaic laws strict legislative rules condemnatory of the flesh of an animal affected with this disease. The laws embodied in the "Mischna" (the oldest part of the Talmud) distinctly refer to the prohibition of the use of such flesh. From that time onwards various ordinances have been instituted with the object of checking the use of consumptive flesh, especially in France and the German States, and even in Spain, Italy and Switzerland; and severe punishment has at different times been inflicted upon butchers and others who have wilfully sold such flesh for human food.

That the milk of tuberculous cows is dangerous there is more conclusive evidence than that the flesh is dangerous. Long before Koch's discovery of the tubercle bacillus it had been accidentally and experimentally demonstrated that milk was infective by ingestion to calves and other young animals; and, as Prof. Walley observes, there is a mass of evidence in favor of the view that by this vehicle the germs of the disease are conveyed from the cow to the human subject. The question of the infection of tuberculosis being conveyed by milk is of greater importance than is infection by flesh; for the two-fold reason that the former is so largely consumed by infants, and generally in an uncooked state. The danger of contamination by milk will be more clearly comprehended when it is known that the tubercle bacillus can be readily detected in the lactiferous product of animals in whose udders tubercular lesions exist; and also, as has been shown by Professor Bang of Copenhagen, in the milk of women in whose

breasts the disease existed. Of the six hundred cows examined by Dr. Woodhead and Prof. McFadyean, already referred to, in six cases they demonstrated the presence of tubercle bacilli in the milk.

Prominent physicians both on this continent and in Europe maintain that tuberculosis is often imparted to human subjects by milk from diseased cows; and Prof. Bollinger, in a paper read not long ago in Munich, has sustained their position. He said that repeated experiments show that the milk of tuberculous beasts has a very decided contagious influence, and its noxious properties cannot always be expelled by boiling. The professor enjoined upon farmers the necessity of taking the strictest care of their stock, and upon people generally, the greatest care as to the quality of milk they use. Prof. D. E. Salmon, of the U.S. Bureau of Animal Industry, declares his belief that tuberculous milk is an exceedingly prolific source of consumption in the human family, and says there are clinical observations proving the transmission of tuberculosis from animals to man through the use of this fluid.

But let us come to something more definite. Prof. Walley says: "In 1872 I lost a child in Edinburgh under circumstances which allowed but of one explanation, viz., that he had contracted mesenteric tuberculosis through the medium of milk." A Mr. Cox, of the Army Veterinary Department, Eng., has related the particulars of a case which led to the same conclusion; as also has Mr. Hopkins, F.R.C.V.S., of Manchester. Fleming has referred to a similar case as occurring in the child of a surgeon in the United States; and a short time ago, says Walley, a case of mesenteric tuberculosis by the imbibition of milk occurred in the child of a well known veterinary officer of the Privy Council. At a meeting of the Edinburgh Medico-Chirurgical Society, held last year, Dr. Woodhead referred to some undoubted cases of transmission to man and the pig by the medium of milk.

A few years ago, in a paper bearing upon this subject which I had the privilege of reading before the Toronto Medical Society, I mentioned the two following cases, which had then but just

been recorded in the *U.S. National Health Bulletin* : One by Mr. J. Shaw, Veterinary Surgeon and Prof. of Vet. Med. in Cornell University, in which a family cow, in Brooklyn, U.S., was found in an advanced state of tuberculosis, and the owner, one William Martin, and his wife were rapidly sinking under the same malady ; in the other case, reported by Dr. Corlies of New Jersey, a family cow, supposed to be suffering from lung plague, was found to be afflicted with tuberculosis instead, and the owner's wife, who had been making free use of the milk warm from the cow, was suffering from the same disease, but was persuaded to give up the use of the milk, when she underwent an immediate and decided improvement.

A more striking case than any one of these was recorded in the *Medical Press and Circular* a few months ago, by Denune of Berne, the details of which are as follows : An infant, aged four months, belonging to a family whose history was absolutely negative in regard to tubercular affections, died of tuberculosis of the mesenteric glands, a fact confirmed by a post-mortem examination. The glands alone contained the bacilli ; or at least none could be found in any other part of the body. The child had been fed with the milk of a cow which was kept for the special purpose, and, for the purpose of enquiry, the animal was killed and examined. The left lung and pleura were found to be studded with tubercle, in which the bacilli were easily detected. The milk first drawn yielded but negative results bacteriologically, but the bacilli were found in portions of this fluid expressed from the deep parts of the mammary glands.

The journal alluded to regards this case as important from another point of view : as if, instead of a human infant, a calf had consumed the milk from its mother's udder, it would in all probability have become tuberculous, and the case would have been regarded as one of hereditary transmission.

According to Prof. Bang and others, the cream and butter, and also the buttermilk, from tuberculous cows, has been shown to be as infective as the milk, if not more so. This is of the most serious importance of all ; for although the milk and flesh can doubtless be so cooked as to be rendered safe, it is not so practicable to cook cream and butter.

Now it becomes a question,—is the disease in Canada so prevalent among cows or other animals as to create alarm or uneasiness? I should say at once, although not very prevalent, it is sufficiently so, in view of all the facts which I have brought before you to-night, with others yet to be noted, to give rise to much uneasiness, and, indeed, to more than this, if some decided action be not soon taken with a view of lessening the danger,—as by a system of inspection of both cows and beef, and of the education of the farming community in relation to the whole subject. I think I can bring before you evidence which would convince anyone, that now is the time to take some action in order to avoid or prevent much more serious consequences in the near future.

I will first say a few words relating to the early symptoms of the disease in cows. A peculiarity of the disease, which much increases our difficulty in deciding upon the point now under consideration, and which must not be overlooked, is the obscurity of the early symptoms. As Prof. Walley says: Under certain circumstances animals may become extensively diseased, and yet no suspicion of the fact be aroused in the minds of the owners of, or the attendants upon, such animals.

According to Fleming, the first perceptible signs are general dullness and indifference, and less activity and energy; with heightened sensibility of the skin, especially over the withers, back and loins, manifested by marked shrinking of the animal if these parts be pinched. There is exaggerated sexual desire, marked by continual or frequent periods of rutting: such animals being known as “bullers” (in France, as *taurelières*). They rarely breed, however, though they may now fatten or yield as much milk as if quite well. The milk is more watery, of a bluish tint, and less rich in nitrogenous matters, fat and sugar, but containing a larger proportion of alkaline salts. There is a dry, deep, though feeble cough, especially on exertion of the animal or on sudden change of temperature of the atmosphere, or on compression of the windpipe. There is not generally expectoration or nasal discharge, though at a later period exertion causes a flow of glairy mucus streaked with thick flakes. The

walls of the chest become more sensitive on percussion, or thumping, and there is a duller sound. By placing the ear on the chest one may often hear, instead of the smooth respiratory murmur of air passing in and out the lungs, as in health, a harsh, rasping or loud blowing sound, especially in some parts of the lungs. The heart's action is at times quicker and stronger; the skin, particularly toward the base of the horns and ears, is hot and dry; intermittent bleeding from the nose may take place; lameness, too, and enlargement of the glands about the neck and elsewhere.

The above symptoms may continue, with little change, for months, but if no preventive or curative measures be adopted, the symptoms become intensified, and what is called the second stage of the disease is reached, and finally the third stage, with weak digestion, diarrhoea, emaciation, etc., but the symptoms of which I need not here detail.

Veterinary-Surgeon Grissonnanche, at the Paris Congress on Tuberculosis, in July, stated that the disease is characterized from the first by tumefaction of the pharyngeal glands, irregular inspiratory movements, a harsh friction sound on auscultation, with a short cough not easily provoked except by sharp percussion on the thoracic parietes, a procedure evidently causing pain to the animal.

Veyssiere, at the same congress, said that he had seized a very fat and apparently well-conditioned cow on account of symptoms of a local tuberculosis, and a post-mortem examination revealed tubercular lesions in the lungs and liver. He had injected some of the expressed juice of the meat of this cow into two rabbits and both animals had died. Guinard said he had seen a lady patient drinking the fresh blood from a fine appearing animal, which was afterwards found to be tuberculous and was condemned. You will remember that the pigeon submitted by Prof. Mills was fairly well nourished when it died. Indeed, it is now generally well known that cows in good condition, appearing to the ordinary observer to be in good health, and which continue to give abundance of milk, may be the subjects of extensive tubercular deposits in different parts of the body.

From these facts it seems clear that the disease may be more common in any locality or country than would be apparent to the public or to any ordinary observer. Then it must be borne in mind, in considering the question of the frequency of cases, that if cows were allowed to die naturally, as human beings are virtually allowed to die, the proportion or number of cows succumbing to the disease would in all probability be much greater. Many farmers, too, on the first symptoms or signs of any failure in the health of his animal, will, from self interest, almost instinctively, at once sell it to the butcher.

Before bringing evidence before you as to the degree of prevalence of the disease in Canada, allow me to briefly quote authorities as to its prevalence in other countries.

Dr. Heath, Pres. American Farmer's Club, some time ago (in *Lond. Med. Rec.*) stated that "This disease prevails extensively among such animals all over the world, and especially in populous and crowded localities. Observations in Mexico have led to the conclusion that 34 per cent. of all beasts slaughtered there were more or less affected with this disease. and probably 50 per cent. of the cows kept in large towns were thus diseased. The fact that this is not more generally recognized is, of course, owing to the animals being slaughtered before the disorder has attained any very noticeable development."

Mr. Salmon, Chief of the Washington Bureau of Animal Industry, at the last November meeting of the A.P.H.A., declared that, from "an inspection of about half a million" cattle, the "widespread prevalence of the disease is certain." In the second and, I think, last report of the Maine State Board of Health is given in detail the history of the destruction by this disease of two very valuable herds within the past two years: one, the Orono herd, in Maine; the other, that of the Willard Asylum Farm, New York. At a recent meeting of the Butchers' Association in California, the agent there of the Bureau of Animal Industry spoke strongly of the prevalence of the disease—of the "rotteness" of the cattle—there, and the great danger to the public health therefrom. At the last meeting of the British Medical Association, Dr. Alfred Carpenter said it had been his

duty to hear evidence when application was made for the condemnation of tuberculous carcasses, and that if all such meat were prohibited it would be impossible to feed such a population as that of London. One of the principal inspectors of the largest meat market in London, he said, stated in the evidence that sometimes as much as 80 per cent. of the meat on sale was so affected. At this same meeting, Dr. Farquharson, M.P., after discussing the subject, said, "under these alarming circumstances, he held it was the duty of the government to deal seriously with it."

About two years ago I sent out questions to a large number of veterinary surgeons throughout Ontario, with the special object of finding out the facts as to the frequency or otherwise of cases of the disease in this province. I received a good many replies, although not so many as I had hoped for. Collectively, these went to show that in the opinion of the writers the disease was not very common, but that on the whole there were a good many cases of it. Some of the respondents mentioned recent cases observed, while others wrote that although few cases had come under their own observation, other veterinary surgeons, they were informed, had observed many cases. One wrote, in effect, that he had reason to believe the disease common, but that stock owners wished to keep it quiet: and he expressed the wish that his name should not be publicly mentioned in connection with this information. At the opening of the Montreal Veterinary College in October, 1887, Dr. R. P. Howard, Dean of McGill Medical Faculty, in the chair, Mr. McEachran, Chief Veterinary Surgeon of the Dominion, said: "The communicability of tuberculosis from animals to man has been proven beyond a doubt. . . . The insidiousness of this disease makes it difficult to arouse the people to its danger. The milk supply is often tested by public analysts and police inspectors to prevent its adulteration by water, but no effort is made to prove the absence of diseased germs in the nutrient fluid which forms the chief diet of infants and invalids. . . . He was aware that this disease was on the increase among cattle in Canada as elsewhere." In the ninth annual report of the Agricultural College and Experimental

Farm, Guelph, Ontario, it is stated that "the extent to which this disease exists amongst the better breed of cattle in this country is alarming, for many reasons; not the least one of which is the danger to which the public are exposed from the consumption of meat from such animals. From an economic standpoint the outlook is serious, as the annual loss must be very great, and will continue to become greater as long as so little care is observed in the selection of healthy dams and sires."

Evidently the belief that heredity is an important factor in causing the disease still retains its hold upon veterinary surgeons to a much greater extent than upon the medical profession.

The President of the New Brunswick Medical Society, Dr. P. R. Inches, at the late annual meeting of the society, after alluding to a number of outbreaks of the disease, and to the danger to the public health therefrom, said: "Since writing the foregoing, I have learned from a reliable source of the existence of the disease in this neighborhood. Cases are met with not unfrequently, and it is only a few days ago that the termination of one of those cases took place. The animal, a Jersey cow, had been ailing for quite a time, and was examined by a leading veterinary surgeon, who diagnosed the case as one of tubercle." The animal was isolated, quarantined, and kept under observation. After death an examination took place, which verified the diagnosis in every particular. The case was reported to the Department of Agriculture. The veterinary surgeon tells me, said Dr. Inches, that such cases are not rare, and that the milk of such animals is used and no doubt their flesh often eaten. His last remark to me was "that the medical profession will wake up some day to the importance of such cases of infectious disease and insist upon measures to prevent its propagation."

Now, from the foregoing facts, and from others so well known that I have not here alluded to them, the whole question may be summed up, and the conclusions which may be reasonably drawn therefrom are briefly as follows:—

1. That, as it has been long known that glanders and hydrophobia may be communicated from animals to man, and it has been clearly demonstrated that tuberculosis may be communi-

cated from animal to animal, from man to man, and from man to animals ; that the bacillus of tubercle, invariably found in all tuberculous matter, is in animals, so far as can be ascertained by the microscope, by their action in different culture media and their other biological characteristics, identical in every respect with the bacillus in the tuberculous matter in man ; that many of the more highly organized parasites, such as tapeworm, trichina and other forms, are common alike to both man and animals ; that there are no known differences, physiological or chemical, between the constituents and structure of the various parts of the human body and those of the domestic animals such as would lead to the conclusion that any parasitic organism which finds suitable conditions for its development in the latter would not find equally suitable conditions in the former ; that it appears that where cows are not to be found, tuberculosis is not common or is quite unknown, and that many observers and investigators in both Europe and America declare that wherever the disease is prevalent amongst cows it is proportionately prevalent amongst the human population ; and, finally, that many cases of tuberculosis in human beings are upon record in which tuberculous milk had been consumed as food, and as no other cause could be assigned, there was the strongest presumptive evidence that the milk was the source of the disease, it would therefore, for these reasons, appear to be in a high degree unreasonable for us to refuse to receive as a fact the extreme probability, at least, that this disease may be, and not infrequently is, conveyed to the human body by the meat, milk and butter of tuberculous cows.

2. That although cases of tuberculous disease in cows are not known to be common in Canada, it must be remembered that, from the attention of the public not having been specially drawn to the subject, the disease has not been suspected or looked for ; that there is abundant evidence that the disease is prevalent in many parts of the adjoining States, many entire herds there having been destroyed by it, while one of the inspectors of the largest meat markets in London, Eng., in evidence before Dr. Carpenter, has declared that sometimes as much as 80 per cent. of the meat examined there was tuberculous ; that a report of

the Experimental Farm at Guelph, Ontario, states that the extent to which this disease exists amongst the better breed of cattle in this country is alarming, and the chief veterinary surgeon of the Dominion, Mr. McEachran, states that the disease is on the increase among cattle in Canada, as elsewhere, while other veterinary surgeons say it is not rare amongst us, and at least one entire herd in Nova Scotia has been destroyed by it ; that the insidious nature of the disease causes it to be often overlooked, and makes it difficult to arouse the public to its occurrence and danger ; that, according to the best authorities, cows may be tuberculous in a marked degree and yet continue to thrive and give abundance of milk containing the tubercle bacilli, and yet the disease not be suspected by the owner or attendant ; that as cows are not allowed to die naturally, but are slaughtered for the market, and doubtless in some cases tuberculous cattle are thus disposed of before the disease has attained noticeable development, and that even in the recognized early symptoms of the disease in individual cases such cattle would doubtless, as a rule, be sold by the owners to the butcher in order to prevent loss ; and, finally, that in Canada there is no system of inspection either of live animals or of slaughtered carcasses by which the proportion of cases of the disease might be estimated ; it is therefore possible, and even probable, that cases of tuberculosis in cows are of much more frequent occurrence in this country than may seem at present to be the case, and that tuberculous meat, milk and butter may now be sometimes sold in the market and be a cause of tuberculosis or consumption in the human organism.

3. That this disease is well known to be infectious ; that it is the rule with infectious diseases that, when no special means is employed to prevent their spread, cases will become more and more frequent, and in a constantly increasing ratio,—one case giving rise to two, three or four cases, and these, again, giving rise to probably four, nine or sixteen other cases, and it is to be feared that if some preventive means be not used the disease may, and is likely to, soon become as prevalent amongst cows in Canada as in any other country ; and that, therefore, it is

most desirable, and in the interests not only of the public health but of all stock growers and dairymen, that measures be taken at the earliest possible time with the view of preventing, while it is yet the easier to do so, the spread and increase of the disease.

[Since writing my recent paper on the Intercommunicability of Tuberculosis, I have observed in the *British Medical Journal* of March 16, 1889, that at the International Medical Congress of Australia, held in January last, Dr. McLaurin, President of the Board of Health of Sydney, in an address, gave the following important evidence in relation to the probability of tuberculosis being communicable from animals to man: After stating that the mortality from consumption in the cities there was 2.39 per 1,000 of the population per annum (a very high rate), said: "Consumption has got a footing amongst us and is now one of our most important causes of death. There is a good deal of trafficking in tuberculous cattle in New South Wales, for both slaughtering and dairy purposes. A law is urgently required making it penal to traffic in diseased animals. Among the Jewish population of New South Wales, numbering 4,000 persons, in three years there was but one death from consumption. Taking the average of that colony, the expected deaths in the 4,000 persons would have been 13.68; and as the Jews live chiefly in the cities we might expect the mortality to be higher. The result is largely due to the avoidance of tuberculous meat."

E. P.]

—Macewen, of Glasgow, has introduced a new method of dealing with aneurisms. He inserts a needle into the wall of the sac sufficiently far to reach the opposite side, and then makes a number of fine scratches on the inner surface of the endothelium. This procedure is quickly followed by a proliferation of leucocytes and the subsequent development of a "white thrombus." This thrombus is found to be much firmer than red clot and is free from the dangers of embolism.

Retrospect Department.

REPORT ON DISEASES OF CHILDREN.

BY A. D. BLACKADER, B.A., M.D.,

Instructor in Diseases of Children, McGill University; Assistant Physician, Montreal General Hospital.

ON THE NATURE OF DIPHTHERIA.

In a very interesting clinical lecture (*Rev. Mens. des Maladies de l'Enf.*, Feb. 1889) Dr. Jules Simon places before us the result of the investigations of MM. Roux and Yersin, which have been lately conducted in Pasteur's laboratory. "Since the time of Bretonneau," he says, "diphtheria has been regarded as a specific disease, contagious and infectious, characterized by the presence of special false membranes and well-defined physical signs, of which the fauces are generally the initial seat, but which have a strong tendency to invade the air passages, and directly produce asphyxia. In regard to the glandular complications, which almost always accompany these lesions, the question has arisen as to whether they are of the nature of an inflammatory extension, or whether they are in all cases the first degree of an intoxication which sometimes becomes the chief malady and carries off the patient in a state of profound prostration without any evidence of interference with the respiratory function." . . . "To-day I do not hesitate to say that doubt is no longer permissible on these points of etiology; and the time has arrived to add to our definition of diphtheria the necessary presence of a bacillus capable of reproducing itself under culture, and of transmitting the disease to animals by inoculation. Since 1868 many investigators have made out the presence of various micrococci in the false membranes of those affected with it, but Senator and Schweninger have proved that all of these exist normally in the upper part of the digestive tract. More lately Talamon obtained a bacterium from the membranes and succeeded in reproducing membranes from cultures of it, but there seems to have been much want of uniformity in his results. The important work published in 1888 in *Les Archives du Laboratoire de M. Pasteur* by MM. Roux and

Yersin has, however, demonstrated that Talamon's microbe must yield the field to that of Klebs and Loeffler. The existence of this special bacillus in the membranes was first demonstrated by Klebs in 1883 at the Wiesbaden Congress, where he fully described it. Since then Loeffler has also succeeded in making pure cultures from it, and reproducing from these diphtheritic membranes in pigeons, chickens, rabbits and guineapigs. He himself, however, remained somewhat uncertain of the correctness of the results since he had not found the bacillus in these reproduced cases typical of diphtheria, and especially since he had not observed any paralysis in such animals as survived the experiments. Rut MM. Roux and Yersin have not only found the bacillus of Klebs and Loeffler in all the cases of diphtheria observed by them, and with pure cultures from this reproduced the diphtheritic membranes in the animals inoculated, but, a fact of great importance, they have succeeded in producing paralysis analogous to the diphtheritic paralysis observed in man. They have demonstrated that the liquid of these cultures, filtered and deprived of its microbes, contains a poison which in injections more or less strong either kills the animals or produces in them certain paralyzes. From experiments it appears that mere contact of a diphtheritic product with a clean and healthy mucous membrane is not sufficient for inoculation. It is not sufficient to paint a healthy mucous membrane with a pure culture of this bacillus of Klebs; the mucous membrane must first be irritated or abraded for the inoculation to take effect. Loeffler used a platinum needle charged with the culture. It would seem established that a healthy mucous membrane opposes an obstacle to the entry of the diphtheritic poison, temporarily effective, but easily rendered insecure—as a slight sore throat, even the most simple, produced by cold, suffices to permit the entrance of the contagium. The frequency of diphtheria after sore throats from measles, scarlet fever, and illnesses which leave behind them an altered condition of the mucous membrane of the upper respiratory passages has for a long time indicated the same fact."

"Since Trousseau, cases of diphtheria have been divided into three classes of increasing gravity—(1) local; (2) infectious;

(3) toxic. Local diphtheria has been characterized by the existence of membranes having only a feeble tendency to propagate themselves, having only indefinite specific qualities, and no toxic properties. My experience, gentlemen, bought in the commencement by more than one painful surprise, forces me to warn you that all membranous sore throats are of the nature of diphtheria, and although local at the first, may become systemic, general, and infectious, or even toxic. I will go further. I will say that every catarrhal, herpetic, or pultaceous sore throat may in the end terminate in some catastrophe of this sort, and that the greatest reserve ought to be the rule in your prognosis when you have to pronounce on the course of any exudations formed in the throat of an infant that you have been asked to examine on account of trouble there.”

Dr. Simon records several examples which occurred in his practice when the affection seemed of the lightest character in its commencement, but rapidly became severe and fatal. He then goes on to say: “Have we, in these cases we have just cited, a purely local diphtheria, or are there any cases which can be considered absolutely benign? Facts oppose themselves to such a view, and the experiments of MM. Roux and Yersin confirm our doubts, for diphtheritic membranes, whatever may be their origin, have furnished the same microbe, which, when brought by successive cultivations to a state of purity, has constantly produced true diphtheria, and at the same time the liquid of these cultures, when separated by filtration from its micro-organism, has always produced definite symptoms indicative of a toxæmia, resulting fatally when the injection was made in sufficiently strong doses and under favorable conditions. They report having seen death occur in rabbits, and especially in guineapigs, within forty-eight hours after an injection of 35 c.c. of a culture liquid, from which the bacilli have been separated by a careful filtration. . . . Adenitis occurred in the gland next the point of injection, followed by induration of the surrounding cellular tissue. No special bacilli after death were able to be discovered either in the blood or in the several organs. It is evident from these experiments that the bacillus of Klebs

elaborates in the culture liquid, a most violent poison. And it seems probable that it is this poison, produced suddenly, in considerable quantity, which brings about in these toxic cases of diphtheria such intense and sudden prostration and rapid death. Certain it is, that all the animals submitted to the injections of this liquid, filtered and freed from all its microbes, remind us, by their prostrate attitude, and paralysis of their respiratory muscles, of the sad picture of the death of such as are struck down by toxic diphtheria. . . . Such facts should influence our mode of combatting this disease ; our efforts should be directed (1) to check the development of these membranes, (2) to remove those that are already formed, and (3), with all, to support the general system."

"Certain facts connected with the special hygiene of this disease have been determined by the experiments of these gentlemen. M. Roux states that the cultures of this microbe preserve their pathogenic powers in closely-sealed tubes for more than five months ; and that even when these powers are diminished by the lapse of time, they are able to be revived with a new intensity under the influence of a new culture. The virulence of the soluble poison is, however, strongest in the older cultures, but appears to lose its strength under the influence of air and light. The possibility of reproducing, after a long time, diphtheritic membranes and all the dread symptoms of diphtheria with a revived culture of the microbe is in entire conformity with the facts of evidently new contagion, after a long time, in a place where previous cases of diphtheria had occurred. Let us also never forget that, with the exception of the slight barrier opposed by an intact mucous membrane, there is no safeguard for those around against the invasion of the microbe ; and translate that conviction by such prescriptions and strict orders that, even if not carried out, may at least place your conscience at rest."

"It seems impossible to close without expressing, though with much reserve, a thought that touches closely on the prophylaxis of diphtheria. M. Roux, after relating some different circumstances under which the poison appeared to be weakened, asks if it is possible to accustom the animal to this poison, and to

produce in them an immunity against the disease. He announces that he will shortly publish an article on this important subject."

On the same subject Dr. Bk. Bachford (*Med. News*, Feb. 2, 1889), in a paper before the Cincinnati Academy of Medicine, writes: "From what has been said, it is evident that our medical knowledge at the present time points strongly to the conclusion that the constitutional symptoms of diphtheria, including the after paralysis, are produced either directly or indirectly by ptomaines. Are these ptomaines formed inside the body or at the seat of the local lesion? . . . All recent writers on this subject agree with Dr. Jacobi in accrediting the local lesion with causing, in part, the septic symptoms and greatly increasing the dangers of the disease." The writer then compares the symptoms of tonsillar and nasal diphtheria—the slight constitutional symptoms in the one and the severe character of them in the other, though both afford equal facility for the microbes to enter the system. He then goes on to say: "Dr. Jacobi says that on the thorough irrigation and disinfection of the nasal cavities hangs every life in nasal diphtheria; and just in proportion to the thoroughness and frequency of the washing of the local lesions, the fever, the septic symptoms, and the cervical lymphangitis are abated. The explanation for this is apparent to the merest novice in medicine, viz., the parts are so cleansed of the poisonous material which, on absorption, are causing the constitutional symptoms that only the minimum amount of this material is left behind to be taken up by the thirsty lymphatics and blood-vessels of this very vascular part, probably of all surfaces in or on the body the best adapted for absorption. If diphtheria is even a constitutional malady, it is so in just this form we are describing, and yet we have in this extract from its clinical history the most direct testimony that it is purely local. . . . That the profound constitutional symptoms are not produced by the diphtheritic germs growing and multiplying in the blood or tissues of the child is amply proven by the fact that these symptoms are abated by treating the local lesion. For if the diphtheritic germs found entrance into the body, and could grow and multiply there to the extent of producing the deep septic symptoms of that

disease, as well might we hope to influence the constitutional symptoms of syphilis by washing the chancre, as to hope to influence the symptoms of diphtheria by washing the gateway by which these germs entered. . . . That the deep glandular enlargement is not due to the migration of diphtheritic germs along the lymphatics is in like manner amply proven by the fact that this enlargement begins to disappear with the thorough irrigation and disinfection of the nasal mucous membrane. If the germs migrated to the lymphatic glands and there produced irritation by their development, then the glands themselves would be the site of an active diphtheritic process; and the disease would continue whether the source of the contagion were removed or not. On the other hand, if the glandular enlargement be due to irritation of chemical products taken up by the lymphatics from the seat of disease, then this enlargement would abate when the surface of absorption was kept clean. . . . The fact that this explanation is supported by clinical observation is very strong testimony in proof of the strictly local origin of diphtheria, for if the diphtheritic germs ever thrive in any part at all removed from the local lesion, and within the tissue of the animal, it must be in the neighboring lymphatic glands. The occasional long-continued or permanent enlargement of the lymphatics following diphtheria can be readily explained by allowing that diphtheria, like other local diseases and injuries, may awaken in the glands a latent tuberculosis or syphilis, which remains as an active disease after the diphtheria has passed away. This lymphatic disease would in turn cause a chronic irritation or congestion of the mucous membrane of the nose and throat, which by reason of the fact that it furnishes a favorable soil would predispose to a second attack. . . . The number of second and third attacks is so small in proportion to the number of first attacks that they can readily be accounted for in this way. Further than this, it is my belief that one attack of diphtheria not only does not predispose to other attacks, except in the way mentioned, but, on the contrary, gives temporary immunity in proportion to the severity of its constitutional symptoms." He then discusses the question of diphtheria being due to an internal parasite, and

concludes that all the evidence is against it being such, but adds, "The rarity with which the diphtheritic exudation is found in the stomach and intestines would indicate that some pathological change in these parts is necessary to furnish the condition requisite for the growth of the germs. These conditions must be such as will furnish it with oxygen either in a free state or in such unstable combination that it can be utilized by the germ in its growth. Such an unstable compound we have in the very hæmoglobin of the blood. A congested and eroded mucous membrane might serve to bring the germ in contact with this body." In conclusion he summarises as follows: "Diphtheria is a purely local disease, caused by an external parasite which is practically if not strictly aerobic. The constitutional symptoms are due to the absorption of poisonous materials, viz., ptomaines from the local lesion, to which are to be attributed the changes occurring in the blood and tissues, including the nerve lesions. The disease has no latent stages, and second and third attacks are due to re-infection. One attack, as a rule, gives at least temporary immunity. After this limited period of immunity has expired, the previous attack may act as a predisposing cause to other attacks if it has left the mucous membrane of the throat in an irritated and inflamed condition. This is more likely to occur in scrofulous subjects. Complications may occur from the entrance into the body of septic germs." From these conclusions he formulates the following rules of treatment:—

1. Dissolve away the membrane if possible, and irrigate thoroughly and frequently the local lesion with an antiseptic solution.

2. Where practicable, follow the irrigation with a dressing which will exclude the atmospheric air.

3. Endeavor to eliminate the poisonous alkaloids from the system by mild catharsis.

4. Endeavor to counteract the toxic effects of the poison on the heart and tissues by administration of stimulants, and on blood by free exhibition of iron.

5. Chronic glandular enlargement, or local disease in or about the throat, a sequel to diphtheria, should receive careful treatment to prevent recurrence of the disease.

6. The patient should be under observation for at least two months after an attack, and an effort be made with tonics and judicious feeding to restore blood and tissues to normal state that they may resist the degenerative nerve changes which cause the after paralysis.

7. A serious exacerbation of the symptoms in any form of ulceration or catarrh of the stomach or intestines occurring in a patient exposed to the diphtheritic poison should lead us to suspect diphtheria of these parts, and to treat the case accordingly.

QUARTERLY RETROSPECT OF GYNÆCOLOGY.

PREPARED BY T. JOHNSON-ALLOWAY, M.D.,

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At a recent meeting of the British Gynæcological Society, Mr. Lawson Tait brought forward some very interesting cases. One of tubal pregnancy with the following history: Recent recovery from an attack of ovaritis. She was 28 years of age, married nine years, three children, last one ten months ago. She had been ill ten months, losing a great deal of blood, with pain in lower part of abdomen. A large cystic mass could be felt in the pelvis, rising three inches above the brim. He considered it a case of suppuration, and therefore opened the abdomen. Instead of this, however, it turned out to be one of tubal pregnancy of left side, which had ruptured into the broad ligament and caused the appearance of a large blood-clot between its layers. There was evidence of recent bleeding into the cavity of sac, which would not have been controlled by any other method than ligature of the broad ligament. The patient did well.

Another case was one having a history of recurrent attacks of peritonitis. She had been married nine years, no children. He diagnosed pyosalpinx. The operation showed it to be a case of double pyosalpinx, the recurrent rupture of which had caused the repeated attacks of peritonitis. Patient recovered.

The next case was one of those very rare extra-peritoneal cysts occurring in a child 14 years of age. Mr. Tait had, at first, taken it for a parovarian cyst, but on opening the abdomen

he found it to be one of those extra-peritoneal cysts lined with the usual amniotic-looking membrane. He scraped the wall, washed out the cavity, and then filled it with water, hermetically closing the wound. The high temperature at once subsided and there had been no appearance of the sac refilling. Mr. Tait considered this a very satisfactory way of treating these cases. If the sac refilled, he would tap it and inject iodine. In future, he would do this at the time of the operation.

The next case was of a similar nature. The symptoms were very acute. The patient was a woman of 21 years, and was very ill. Mr. Tait recognized the condition and operated at once. In this case he also found the two Fallopian tubes greatly distended, covered with granulations, and full of a cheesy material, being the second case in which he had met with tubercular disease of the tubes occurring in the cysts. Mr. Tait states that the proofs of the morbid material being tubercular, were incontestable, though no bacilli were found—a point to which Mr. Tait does not attach much importance. The patient recovered.

Mr. Tait has lately written upon the influence of removal of the uterus and its appendages on the sexual appetite. He states that recent events have drawn much attention to this subject, and the strongly contradictory evidence given in a court of law has given it a prominence which otherwise it hardly deserved. Mr. Tait scornfully repudiates some of the erroneous beliefs on this subject. For instance, that because of the removal of both testicles in a man he is therefore not only deprived of the power of impregnating a woman, but also of engaging in sexual intercourse. This condition was based on false analogy, and was not substantiated by facts. The evidence supplied by the lower animals goes to show that the power of engaging in the sexual act is not destroyed by removing the testicles after puberty, although the females seem to know, probably by the sense of smell, that such an animal is imperfect, and they will not permit his approach. Mr. Tait relates some very interesting facts in regard to this question. For instance, before he had been able to find a report of a case where both testicles had been removed

in a man, he was greatly importuned by a clergyman to remove both of his testicles with the object of destroying some troublesome symptoms from which that gentleman suffered, but as he did not feel justified in expecting any satisfactory result from the operation he declined to undertake it. But lately, however, by accident he had had such a case brought under his notice. A gentleman of 47 years of age first had one testicle removed at the age of 19, then married, and at the age of 39 had the remaining testicle removed. The patient stated that through fear of failure he did not for some months afterwards attempt sexual intercourse with his wife, but gradually his old habits were resumed, and now he has intercourse as frequently and as satisfactorily as when first married.

Regarding oöphorectomy, Mr. Tait says that he does not think the ovaries have any more to do with the sexual appetite than the front teeth; and that he has arrived at this conclusion from close inquiries in cases ranging in age from 17 to 60 years.

Mr. Tait also gives three cases where hysterectomy was performed before marriage, and that the operation had no injurious effect upon the patient in this respect.

During the discussion on Mr. Tait's paper, he was universally supported in his views that the ovaries and uterus had nothing whatever to do with the sexual feeling, and that, as Dr. Routh said, it took its origin in the genito-spinal centre of Budge.

Notes of a Case of Uterine Fibroid treated by Electricity, by H. T. Rutherford, M.D.—This was a case of uterine fibroma treated by Apostoli's method. The patient had received three intra-uterine applications of the galvanic current, the negative pole in the uterus. The intensity at each application was respectively 120, 100 and 110 mill., each application lasting from ten to fifteen minutes. There was not much pain experienced after each application, but the temperature became elevated (100°F.) On the second day following the last application the patient experienced a decided chill followed by an elevation of temperature to 104.2°F. Then followed a distinct attack of localized peritonitis. During the following four or five weeks the patient remained in a very serious condition—high tempera-

ture, rapid pulse, and emaciation. During this time symptoms of septicæmia were present. The axillary glands became swollen and painful. Shortly after this the symptoms of sepsis gradually disappeared and she began to improve; the improvement lasted only for a few days however, when rigors, sweats and high temperature again set in. Phlebitis of right arm caused a good deal of pain at this time. During the following month the patient gradually improved again and became finally convalescent. The tumor, which had reached to within one inch or so from the umbilicus, had now quite disappeared, leaving a uterus measuring two and a half inches in cavity.

The narration of this case was given very minutely by Dr. Rutherford, and it goes to show what an extremely narrow escape the patient had had from death by pyæmia, and what a dangerous method of treatment, in some cases of fibroids, that by electricity must be, even with medium degree of current-strength. The effect produced upon the neoplasm was undoubtedly that which caused it to slough, and the products became absorbed. In this way the entire disappearance of the tumor was effected.

Ruptured Tubal Pregnancy.—Dr. Bantock reported before the British Gynæcological Society an interesting case of ruptured tubal pregnancy. The patient was found looking very pale and exhausted with a feeble pulse of 150. Abdomen tympanitic and extremely tender during examination. Cervix admitted index finger; body of uterus somewhat in retroverted position. Above and in front there was an ill-defined tumor of small size with a feeling of resistance in its immediate neighborhood. Slight bloody discharge from vagina. Her age was twenty-six; one child five years of age. For last six weeks has complained of pain in left groin and hypogastrium. Last menstruation about thirteen weeks ago. She now has several recurring attacks of sharp abdominal pains followed by faintness. Following the last attack she fainted and her physician was sent for. She was found blanched to a degree and retching. Dr. Bantock diagnosed ruptured tubal pregnancy, and the place of residence of the patient being unsuitable in many respects for an operation, he had her removed to hospital at

once. Although the patient arrived, several hours afterwards, in an almost dying condition, Dr. Bantock operated, removing the sac, placenta and foetus attached. The sac was found lying in front of the uterus and over the bladder. In doing this Dr. Bantock went at once for the pedicle, forcibly compressing it to prevent further hemorrhage, which had been pretty free up to this time. After ligaturing the pedicle the abdominal cavity was well washed out and a drainage tube inserted. The patient made a very good recovery, returning home on the twenty-third day after the operation. The following is the report of the pathologist on the specimen: "The foetal sac is thin walled and about three inches in diameter; it consists of the outer part of the Fallopian tube. The remainder of the tube lies on the posterior surface of the sac, into which it opens by a crescentic aperture nearly half an inch in diameter. The inner wall of the sac is for the most part smooth except where shreds of placental tissue are attached to it. The ovary is small and perfectly separate from the sac."

In connection with this interesting case it is worthy of notice and commendation that Dr. Bantock refused to operate at the patient's home. Such cases in our experience should always be removed to the place where the surgeon has been accustomed to operate. In Dr. Bantock's case the patient was in so critical a condition that she had no recollection of having entered the hospital; and it is a fact extremely valuable to bear in mind. Many a favorable case of abdominal section has been lost by operating at the patient's home, and this has occurred from a desire on the part of the surgeon to give way to the importunities of the relations and friends.

Diagnosis of Ruptured Ectopic Pregnancy and Twisted Pedicle of an Ovarian Tumor.—Dr. Bantock says there is always an amount of shock present when strangulation of the pedicle takes place and he thinks it is better to wait until the symptoms of shock have passed off before operating. The symptoms recognized by Dr. Bantock were, localised peritonitis, high temperature, quick pulse, vomiting and great abdominal tenderness. After a few days these symptoms

subside and the patient recovers. *Dr. Barnes* was of opinion that in twisted pedicle the symptoms quoted went from bad to worse. The first shock was not all; there was a continuous shock from increasing injury leading to exhaustion, and he thought it was very desirable to operate at once. He thought it was rather hazardous to wait, as similar symptoms might be due to ruptured tubal pregnancy.—(*Brit. Gyn. Jour.*, Nov. 1888.)

Gynæcological Operations in Tubercular Subjects. (*Jules Batnaud*)—The indications and contra-indications for surgical interference in tubercular patients have frequently been discussed. Whenever a thin, sickly female of weak constitution is affected with uterine disease, demanding surgical interference, careful and repeated examination of the chest should be made, and the patient kept some time under observation. If tuberculosis is only suspected, an operation may be undertaken, but great care is necessary for some time after, as a slight cause may light up acute disease, ending in death.

Psychoses and Gynæcological Operation. (*Fillebrown, Hamburg*)—The appearance of psychoses after operation upon the female genitals has only lately been observed by operators. The causative relation of the operation is by no means clear, and the analysis of cases only renders the association of cause and effect more and more difficult to comprehend. Naturally we look first for some evidence of predisposition, either in the family history or in the history of the patient. Prof. Werth, of Kiel, reported six cases of psychoses following operation. In thirty-two total extirpations of the uterus two cases occurred.

The Menopause in its Relations to Disease. (*James B. Hunter, N. Y.*)—The climacteric is not merely a local change, but something more. It means a profound constitutional revolution. Among the local changes which take place may be noted: 1. The atrophy, and growth of fibrous tissue in the stroma of the ovaries at the expense of the Graafian vesicles. 2. Atrophic change in the mucous membrane and glands of the uterus, with increase of fibrous tissue. 3. Atrophy of the vagina and external genitals. 4. Diminished blood supply of

the pelvic organs. Preceding these changes is often an exaggeration of all the normal conditions, with increased vascularity and nervous phenomena. This is the period when neglected lacerations of the cervix uteri are apt to become evident. It is the period of malignant degeneration. It is the period at which hereditary traits, especially insanity, are prone to appear. The preliminary period spoken of may be either brief or long. It is one of heightened arterial tension and marked disturbance of the circulation. The condition may be seen and studied in cases in which the monopause has been prematurely induced by removal of the appendages. The frequent and painful flushing of the face, accompanied sometimes with vertigo, are symptoms often experienced for a year or so after the operation. Dr. Hunter drew attention to the two systems chiefly influenced by the change, namely, the circulatory and nervous systems.—*New York Medical Record*, January, 1889.

Technique of Vaginal Hysterectomy. (James B. Hunter, N.Y.)—Dr. Hunter, in his paper, makes a most important statement in regard to capital operations, namely, that two facts must be demonstrated in regard to such operations. 1. The immediate mortality from the operation under consideration must be small. 2. The results, immediate and remote, must be such as to overbalance, in benefit to the patient, the risk incurred by the operation. In regard to the second point Dr. Hunter rightly assumes that in so far as hysterectomy goes it has been amply proven. He therefore deals with the first point and shows that the operation may be performed so as to render the mortality very small.

The Danger of Galvano-caustic Chemical Currents of High Intensity.—DANION has known of very serious complications, and even death, to be caused by the application of currents of high intensity. The author has experimented on rabbits and has shown that these currents of high intensities cause various congestive effects, the danger of which has been demonstrated by the death of animals and by autopsies made at different periods during the experiments. Currents of small intensity

produce effects as good as currents of high intensity, and are unattended by danger. The conclusions the author arrives at are that (1) numerous and varied experiments prove that currents of high intensity often bring about marked congestions, frequently followed by inflammation.

(2) The clinical results obtained in the treatment of uterine affections confirm in a very clear manner the effects of experimental galvanism. High intensities frequently produce grave inflammatory symptoms and cause death.

(3) There exists no physiological fact, nor any empirical result, which can be used as an argument in favor of the substitution of currents of high, for those of low intensity.

(4) Tripier's method of using currents of low intensity has been enlarged upon by Apostoli, who employs currents of high intensity, the dosage reaching 200 and 250 milliampères.

Vaginal Hysterectomy.—We find in this article seven cases of vaginal hysterectomy recorded; one for fibroid uterus and six for malignant disease. Five of the six cases of cancer were completely cured, while the sixth died five months after operation. M. Pozzi opens the anterior and posterior cul-de-sacs of the vagina in the usual way, and ligatures the broad ligaments with silk, instead of clamping them. Five of the malignant cases were squamous epithelioma of the cervix, the sixth being cylindrical-celled epithelioma. The one death which occurred resulted from shock the evening after the operation. In this case anæsthesia had been prolonged and deep, and the kidney structure was greatly altered.—*S. Pozzi.*

Pelvic Peritonitis. (J. EASTMAN.)—Inflammation of the pelvic peritoneum is more common than pelvic cellulitis, and is frequently overlooked. Pelvic cellulitis is frequently the result of a pre-existing pelvic peritonitis. Owing to the periodic movements and engorgements of the Fallopian tubes, the inflammatory process frequently spreads to other adjacent structures. The author follows Winckel in classifying perimetritis, perisalpingitis, perioöphoritis, pericystitis, periproctitis under the term pelvic peritonitis. Adhesions are formed with neighboring organs, and each recurring attack of inflammation extends these

adhesions. The serum poured out may form abscesses, or cause complete intestinal obstruction. Amongst the more important causes of pelvic peritonitis are noted the brain-cramming of our school system, the eruptive fevers, especially in young girls. The action of gonorrhœa as a causative agent is overrated, though the author is aware of its importance. Induced abortion and means used to prevent conception, especially the use of cold water injections, are also important causes.—*Am. Jour. of Obstetrics.*

A Plea for Early Operative Interference in cases of Obscure Pelvic Pains. By R. B. Hall, M.D.—An interesting article, read at the 1888 meeting of the American Medical Association. The author dwells shortly on the probability of many cases which were in older text-books described as cases of cellulitis, being in reality cases of salpingitis and pelvic peritonitis. For the relief of this condition, removal of the uterine appendages has been advocated and practised with markedly successful results. The operation in the beginning was opposed by many surgeons, but is now recognized as warrantable in certain cases, except by a few bigoted men. The chief objections to the operation are: (1) The difficulty of diagnosis in many cases. (2) It was said to unsex the patient. (3) The difficulty in separating the adhesions deep down into the pelvis.

In replying to these objections, the author points out that the difficulty in diagnosis is not so great as it appears, if the symptoms and physical signs be carefully noted. It is, perhaps, in the majority of cases, impossible to diagnose between hydro-, pyo- and hæmato-salpingitis, but practically the differential diagnosis between these three conditions is a matter of small consequence, seeing that the treatment is the same for all. The author emphatically denies that the operation unsexes the woman and causes her to assume masculine features. The patient is certainly unsexed as regards her productive powers; but a woman with diseased conditions of both tubes, with chronic ovaritis and adherent tubes, will be just as barren as one from whom both ovaries and tubes have been removed. That the operation destroys her sexual desire

is contrary to all experience. "The changes in the person of the subject are not more marked after this than after the McDowell operation, and the disease requiring it calls for surgical interference just as urgently as does the existence of a large tumor." The objection to the operation on account of the numerous adhesions is now past; careful breaking down of these adhesions, ligaturing the larger bleeding points and the insertion of a drainage tube have overcome this objection.

In conclusion, the author advocates the following plan of treatment: For twelve to eighteen months, try proper and constant care and treatment, which, if not followed by more than temporary relief, should be followed by removal of the diseased organs.—*Jour. of Amer. Med. Association.*

Total Vaginal Hysterectomy. By SECHEYRON.—Great progress has been made in total vaginal hysterectomy, both in the *technique* and result of the operation. The mortality attending this surgical procedure is becoming less year by year; thus, Leopold, Kletz, Brennecke and Heilbrun can show a series of cases with an extremely low mortality. Péan has a record of sixteen operations without a single death. In cases of cancer limited to the body, or cervix of the uterus, or restricted to one portion only, total vaginal hysterectomy is advisable. Partial extirpation is not to be recommended. The total operation is merely palliative, just as excision of a cancerous breast is. In both cases the operation is undertaken in the hope that the disease will not return. The author considers the operation justifiable from two points of view; firstly, as regards the mortality which is steadily decreased; secondly, as regards the remote results, which seem very favorable; upon this point, however, there are certain elements of uncertainty, and a further study of the future of the cases is necessary before expressing a decided opinion on the matter.—*Archives de Tocologie.*

On Locking, Retroversion and Strangulation of Uterine Fibroids in the Pelvic Excavation.—Dr. J. Matthews Duncan, the author of this paper, stated that the locking in the pelvic excavation implied impaction, not the result of adhesions. Its

effects might be produced by pressure into the pelvic brim of a tumor too large to pass the retroversion of the gravid uterus in its characteristic form. The symptoms and treatment of the two conditions were nearly alike. Strangulation, with locking, of a fibroid, with or without retroversion, was a rare accident. A case was described. Dr. Duncan had not seen a similar case of strangulation of or by a gravid uterus.—*Am. Jour. of Obstetrics.*

Chronic Pelvic Cellulitis, and the Conditions which Simulate it.—Hardon holds that chronic pelvic cellulitis never occurs except as a sequel of acute pelvic cellulitis. The clinical history of acute pelvic cellulitis presents three stages: a stage of effusion, characterized by the effusion of serum into the cellular tissue; a stage of solidification, characterized by the solidification of the effused serum; and a stage of absorption or of suppuration. It is impossible for effusion of plastic material to take place as a consequence of chronic inflammation, that pathological process being characterized by cell proliferation and hypertrophy of normal structures—conditions which have never been found to exist in the pelvic cellular tissue. The researches of Coe show that when so-called pelvic cellulitis has existed during life, no appearances corresponding to this condition have been found after death. Clinical evidence points in the same direction. In acute pelvic cellulitis the womb is immovably fixed by a deposit of plastic lymph, while in so-called chronic cellulitis the womb is movable, and if the organ be lifted to its normal position, the hard masses in the broad ligaments disappear with a rapidity which is inconsistent with the theory of a chronic inflammatory process. What, then, is the significance of such masses? Dr. Hardon believed them to be due to accumulation of blood in the pelvic veins—a view which is corroborated by a study of the anatomy of those veins. The beneficial effect of the vaginal douche in such cases is due to the fact that it lessens the amount of blood in the pelvic blood-vessels, and hastens involution by diminishing the cedemic congestion, thereby lessening the weight of the organ, and allowing it to assume its normal

position in the pelvis. Another condition often regarded as chronic pelvic cellulitis is found in salpingitis, with distension of the tube. The diagnosis in uncomplicated cases is not difficult, provided attention be directed to the distinctive features of the conditions just referred to, with which it is liable to be confounded. When pelvic cellulitis occurs by extension of inflammation from the tube, and one attack follows another, the condition is not one of chronic pelvic cellulitis, but of renewed attacks of acute pelvic cellulitis. Acute pelvic cellulitis is often secondary to disease of other pelvic organs, but not necessarily so, since aspiration in the stage of effusion will abort an attack, and sometimes the pelvic organs are then found to be free from disease. Another condition sometimes mistaken for chronic pelvic cellulitis is contraction of the utero-sacral ligaments. The fact that in many cases such contraction disappears after the patient is etherized, and is not found after death, as shown by Coe, proves that it is not due to organic changes in the tissues. Hardness in the roof of the pelvis may be disregarded as an obstacle to operations about the cervix, except when it is accompanied by other symptoms denoting the existence of acute inflammation.—*Trans. South. Surg. and Assoc.*, 1888.

Pyo-salpinx and its Operative Removal.—Prof. Gusserow (*Arch. f. Gyn.*, XXXII., 2) presents a series of thirty-one laparotomies performed during the last three years, for the cure of this trouble, in ten of which he had removed both tubes; but one case died, and that of septic peritonitis. The author understood by the term pyo-salpinx a disease of the tubes in which they form a sac closed by adhesions to surrounding structures, which sac is filled with pus; clinical experience did not uphold the distinction between pyo-salpinx and salpingitis purulenta. The main thing for the patient was whether or not the diseased tube be closed and a purulent secretion collected on its mucous membrane. The cases cited were of such a nature. In all there had been symptoms of perimetritis, for longer or shorter periods, ere pyo-salpinx had been demonstrable. It is, in fact, impossible to determine the existence of a closed tube-

sac filled with pus before adhesions have taken place at the abdominal openings of the tubes. The etiology, therefore, resolves itself in that of perimetritis. Despite the fact that gonorrhœal infection plays a part, it must not be over-estimated; cases of perimetritis can often be traced to abortion, labor, etc.; investigation had shown gonococci to be present in the pus from the tubes in extremely few cases; in his own cases the investigation had been followed by uniformly negative results. The occurrence of pyo-salpinx must then be regarded as the extension by continuity of a catarrh of the uterine mucous membrane—of gonorrhœal or other nature—to the tubes, and then, by the entrance of the tubal contents into the abdominal cavity, inducing a localized peritonitis or perimetritis; the perimetritis so produced leads to distortion and matting together of the pelvic organs, particularly of one or both tubes; the purulent secretion thus finds no outlet, and a retention-cyst forms in the tube.—*Amer. Jour. Obstetrics*, Nov., 1888.

The Early Recognition of Cancer of the Cervix Uteri. (HENRY C. COE, N.Y.)—Dr. Coe (*Med. News*, Feb. 16, 1889) has written under the above title a very useful and instructive paper. He has written, however, from the pathologist's side of the question, which we would naturally expect, knowing Dr. Coe's experience in that direction. The advice given by Dr. Coe, to the general practitioner, to recognize the initial forms or suspicious beginnings of malignant disease in the cervix, is well timed and of inestimable value. Dr. Coe draws attention to certain popular fallacies with regard to malignant disease of the uterus, such as the so-called "cachexia" of the patient and to the presence of foul discharges from the uterus. He also shows the error of regarding malignant disease under the old familiar division of Scirrhus, Medullary cancer, Colloid cancer, and Epithelioma. Such a division does not represent distinct varieties, but accidental conditions or successive stages of development. We now know that all this, as Dr. Lusk says, served to introduce into the subject an element of confusion detrimental to progress, as

rarely two observers were found in agreement as to the classification of the disease in the same patient.

Dr. Coe does well to tread lightly upon the ground involved in the value of an opinion based upon the microscopical examination. We have been assured that such a specimen, on more occasions than one, after microscopic examination by a competent microscopist, showed no evidence of malignancy, and still the patient died of undoubted cancer. The practised clinical observer can rarely be deceived in the appearance of a diseased cervix, and if he is in doubt he should always give the patient the benefit of that doubt, and operate. After considering some other important points in connection with this subject Dr. Coe speaks of substituting Schröder's excision of the cervix for Emmet's trachelorrhaphy in the treatment of old standing cases of connective tissue hyperplasia, with eversion of the cervix following bilateral laceration. The author does not, we hope, think this idea is original, no matter however correct it may be. In a paper read before the Dominion Medical Association at Ottawa, September, 1888, entitled "Indications for, and Comparative Merits of, Emmet's and Schröder's Operations on the Cervix Uteri," the whole matter was discussed and the advantage of Schröder's excision or amputation of the cervix brought for the first time prominently before the profession. At this meeting the method of teaching the consecutive steps in the performance of the two operations was demonstrated by means of damp clay models.

Reviews and Notices of Books.

The Pathology and Treatment of Displacements of the Uterus. By Dr. B. S. SCHULTZE. Translated from the German by J. J. MACAN, M.A., M.R.C.S., Eng., and edited by ARTHUR V. MACAN, M.B., Master of the Rotunda Hospital, Dublin, with 120 illustrations. New York: D. Appleton & Co.

We hail with much pleasure this first English translation of Prof. Schultze's book. Among gynæcologists he is well known as the apostle of certain new, but not yet universally accepted doctrines on the subject of which it treats. On the normal position of the uterus the author holds views that have been rather slow in securing adhesion. Prof. Schultze believes that the commonly accepted views as to the normal position of this organ have been derived from its examination in the cadaver, and he points out in defence of his own opinion that in the dead body every factor in the position of the uterus which depends on muscular action, even intra-abdominal pressure itself, is destroyed, and that—irrespective of the position of the uterus during life—a retro-position existing after the dead body has been lying for days in the dorso-horizontal, may have been caused by the weight of the organ itself, the passive mobility of which after death is so great. Schultze believes that the position of the uterus or, more correctly, its long axis when the body is upright is almost, if not quite, horizontal, and that this may be proved by a careful bimanual examination, and by a sound and goniometer he has devised for the purpose. We believe that he has demonstrated his propositions, and agree with the editor when he says in his preface that “while it would perhaps be too much to expect that the truth of the views here put forward should be at once acknowledged in all countries, but their acception will assuredly come.”

The first chapter is devoted to the general pathology of the subject, and it is considered most fully and patiently from every possible point of view, and occupies sixty-seven pages of the translation. Schultze believes the normal form of the uterus in

the milliparous woman to be one of moderate ante flexion. He therefore speaks of normal and of pathological ante flexion. The latter he believes to be always the result of cicatricial processes of the utero-sacral ligaments. Dysmenorrhœa he rarely considers to be the result of stenosis. Dysmenorrhœa in cases of pathological ante flexion he believes to be due to metritis, and he ably maintains his opinions. There can be no doubt that the theory of mechanical dysmenorrhœa has been pushed much beyond its legitimate limits, or, as Schultze says, "stenosis is much less common than its diagnosis." Earnest students of displacements of the uterus need not be reminded of the importance, according to the author, of parametritis posterior as a cause, and we believe that few who have followed his painstaking and careful methods can remain unconvinced.

As regards anteversion, the author thinks it of little importance independently of the metritis, with which it is so generally associated. As a logical sequence he therefore has little to say in favor of pessaries or any other treatment for this condition, except for the cure of the metritis and other forms of inflammation which complicate it. He believes all pessaries to be injurious till such complications are removed, and then they are commonly unnecessary. In this opinion it will be observed that he is opposed to certain eminent American authorities, especially Thomas. In our humble opinion Schultze has the best of the argument.

Backward displacements and their numerous complications receive all the attention their great frequency and importance, as the cause of much suffering, deserve. His vast experience and great skill in their management make this a most valuable part of his book. He employs pessaries very extensively, but with much care and discrimination so essential to success. He has, however, not much to say in favor of the Hodge pessary and its many modifications. His favorite is his own figure-of-eight pessary, which he moulds to suit each case from copper rings coated with soft rubber. The valid objection to the coating of soft rubber is now done away with by the more modern coating of celluloid. The figure-of-eight pessary he believes better than any other to meet the prime indication in the treat

ment of retroversion, namely, the holding of the cervix in the upper and back part of the pelvis so as to permit of intra-abdominal pressure acting as is normal on the posterior surface of the uterus. Dexterity and mechanical skill in moulding this pessary to suit individual requirements are very necessary. But this is true of all pessaries. For cases of retroversion and prolapse, with relaxation of the outlet of the vagina, he has devised a sledge-shaped pessary, which he strongly recommends. In certain cases of marked retroflexion he combines the use of an intra-uterine stem with the figure-of-eight. Descent and prolapse are also fully considered in all their aspects. The various plastic operations are described, and Hégar's colporrhaphia posterior is the author's favorite. The Alexander operation and the more modern ventral fixation of the uterus are merely mentioned, and that with little favor. Schultze does not seem to perform them.

The last chapter is devoted to a full consideration of inversion. This is also a most satisfactory one, except as to treatment. In the simple chronic form the author advises manual reposition, and says in his resumé that "the only instrument admissible is a tampon of India-rubber." No mention is made of the method by elastic pressure with cup-shaped instruments devised by Lawson Tait.

Of the whole work it must be said that it is a monument of industry in original observation. It is illustrated with one hundred and twenty most valuable woodcuts. The translator's and editor's work is beyond all praise, but this is only what we should expect of the Macans. Of the publisher's work, we cannot say more than that not one single exception can be taken to it.

Clinical Lectures on Diseases of the Urinary Organs.

Delivered at University College Hospital. By SIR HENRY THOMPSON, Consulting Surgeon and Emeritus Professor of Clinical Surgery to University College Hospital, etc., etc. Eighth edition. London: J. & A. Churchill, 11 New Burlington street, 1888.

The present edition of this admirable work comprises a course of thirty-two lectures delivered by the author from

time to time at the University College Hospital. There are six lectures more than appeared in the last edition. The chief additions relate to the suprapubic operation for stone and for tumors; to the results of digital exploration of the bladder; to the most recent modes of affording relief by operation in cases of advanced prostatic disease; to the latest operative treatment for tumors of the bladder, besides embracing a *resumé* of the author's entire experience of operations for calculus, numbering in all about nine hundred cases. All the lectures have been thoroughly revised and some re-written, while many of the illustrations are quite new and original. The suprapubic operation for the removal of large calculi and tumors as well as for purposes of exploration is especially discussed at considerable length, the author being evidently very much impressed with its advantages in suitable cases. The treatment of the wound, regarding which such a diversity of opinion exists among surgeons, is in his hands made very simple. He says "the only attempt I have made to limit its extent has been by introducing a large suture about an inch below the upper angle through the abdominal walls and sometimes another an inch below that; but I have never used a single suture in the bladder. Before stitching, however, I insert in the bladder, at the lower angle of the wound, a tube made of silk gum, about a third of an inch in diameter, and six or seven inches long. It is a good plan to attach this by a firmly tied ligature to the lower of the two sutures, which effectually prevents its slipping. The tube may be left for about two days or so to insure a free passage for the urine, and then be removed. I have rarely found any catheter necessary." In addition the lectures deal fully with the commoner genito-urinary affections, with which the general practitioner has often to deal, such as stricture, cystitis, enlarged prostate, hematuria, etc., so that the book should be in the library of every physician as well as surgeon, and will be found also of service to the advanced student. As an illustration of the great reputation of the author it might be mentioned that this work is employed as a text-book in most of the medical schools of Europe, and for that purpose has been translated into the French, German, Italian, Spanish and Russian languages.

Handbook of the Diagnosis and Treatment of Skin Diseases. By ARTHUR VAN HARLINGEN, M.D. Second edition. Enlarged and revised. Philadelphia: Blakiston, Son & Co.

The fact that a second edition of this book has been called for attests its value. Much new material has been added and also a number of very excellent illustrations. This work might be named a dictionary of skin diseases for it consists of a number of short articles on the various skin diseases arranged in alphabetical order. As a reference book for students it will prove especially useful, as the information needed on any skin affection can be quickly got at. Many tables of differential diagrams are given and various short articles on such subjects as baths, desquamation, electricity in treatment of skin diseases, hyperæsthesia of skin, ointments, diet, etc., are introduced. The articles are short and to the point, giving all the essentials of diagnosis and treatment. Pathological anatomy is conspicuous by its absence. We can heartily recommend this work to students as a handy book of reference in skin diseases. It, however, should not take the place of the larger and more complete treatises on diseases of the skin.

The Causation of Disease, An Exposition of the Ultimate Factors which Induce It. By HARRY CAMPBELL, M.D, B.S. (London), Assistant Physician and Pathologist to the Northwest London Hospital. London: H. K. Lewis, 136 Gower street. 1889.

A very remarkable book; nothing of the kind published; may become a classic. The title scarcely suggests clearly enough the nature of the work which is quite new. This book is really a treatise on disease from the evolutionist's standpoint, and the first that is sufficiently broad to be worthy of a follower of the great master spirit—Darwin himself. The author, in his preface, briefly states the two ways in which a book may be written; and for our part we are glad he worked out the subject independently and did not first "saturate himself with all the available literature." The latter course, too common, accounts for the lack of individuality in most of the books of the day. At the same time the

author does show that he has been "saturated" with the most important principles of organic evolution as worked out by the great master thinkers on the subject. It is not easy to give a synopsis of this work. While clear, the argument is very close, often subtle. We admire very much the breadth and soundness of the basis on which the superstructure rests. Nor is the author's bold and candid criticism of those writers standing high in public esteem other than refreshing. We agree with his implication in one or two places that an undue demand for facts, without which the Anglo-Saxon mind is so slow to see a principle, as uncalled for, if not an evidence of relative stupidity—a sort of color blindness to principles as distinguished from mere concrete facts. The man that cannot believe in evolution with the mass of evidence now gathered is not likely to be convinced at all. It is not worth while to waste energy in attempting to further enlighten minds of such constitution. We hail the book with especial pleasure as it is another evidence that the medicine of the future must be biological and will only be scientific when it becomes so. We have just entered fairly upon a new era, by a side path (bacteriology), but the sooner we get into the main road the better. This work will open a way through an as yet comparative desert. All who expect to understand the present and to forecast the future should read this truly magnificent production.

T. W. M.

Archives de Physiologie Normale et Pathologique.

The first volume of the fifth series of this periodical, now in its twenty-first year, has appeared, and contains about four hundred pages of reading matter, illustrated by two plates and fifty-eight figures. Besides a "bibliography" or review of current monographs, etc., and an analysis of the contents of the various foreign periodicals, this volume contains eighteen original articles, most of them of considerable value. The names of Dastre and François-Franck are linked with that of the veteran Brown-Séguard as editors. Brown-Séguard is, of course, the guiding star and controlling spirit of this periodical. Whether the future pronounces his influence over French physiological and pathological research healthful it cannot but declare it potent. The chief editor is unquestion-

ably one of the most brilliant thinkers France possesses to-day in the realm of medicine. Scientists tend so much at present to form schools, to get into little shcals, like so many herrings all going the one way that a bold, independent, even if erratic thinker, like Brown-Séguard, is a great blessing to his age. Better the full tide of mental life with some error than the exclusive, narrow doctrines of a limited school. We would not care to follow this illustrious man as our guide; but we regard such as he as essential factors in scientific progress, and as much needed just now.

He contributes a leading paper to this volume on "The Field of Action of Inhibition in Physiology, Pathology and Therapeutics." After defining "inhibition" as the partial or complete cessation of an activity owing to irritation, he proceeds to enumerate the many different ways in which this is shown, both in the domain of physiology and of pathology, and the paper is very suggestive. Perhaps the contribution of greatest general interest is the outcome of the author's views on inhibition and affirms that "normal, like hypnotic sleep, is the result of an inhibition of intellectual activity." He adduces evidence to show that sleep may occur with all conditions of vascularity of the brain, though he does not deny that anæmia favors sleep. He indicates that during sleep there is unusual activity of some functions as well as diminution of others. Thus there is persistent contraction of the pupil; contraction of the orbicular muscles; contraction of the internal and superior recti, and contraction of the blood vessels of the retina and cerebrum. He points out that the pigeon deprived of its cerebral lobes sleeps and awakes periodically, hence he is not satisfied that the "irritations" which cause sleep, are cortical; he inclines to place them rather in the basal regions of the brain. This is one way of viewing the subject; but it seems to us that it is, after all, not entirely sound, nor calculated to give as broad a view of the phenomena as could be desired. Why not regard some of the phenomena as the result not of an increased activity *per se* but as owing to a lessened activity in closely related parts (as in the case of the ocular muscles)? Until this relation—greater activity of the part relatively, and not due to any irritation necessarily accompanied by lessened activity of another, as the

rule—is more recognized, physiology and pathology will remain narrow and consequently erroneous. The specialism of our day does not favor the perception of such relationships. Each man is too much in his own corner to understand even that in relation to the whole. We have not space to examine other of the many papers in this volume, but we are glad some of the authors have stated the conclusions drawn from their researches in synoptical form, a practice to be imitated. T. W. M.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, January 11th, 1889.

WM. GARDNER, M.D., PRESIDENT, IN THE CHAIR.

Double Tubercular Pyosalpinx.—DR. LAFLEUR exhibited for Dr. Wm. Gardner specimens from the case. Both tubes were enlarged, sausage-shaped, and tapering towards their uterine extremity. The outer third of each tube contained a quantity of thick yellow pus. The mucous membrane beneath was extensively ulcerated, and in it there were a few small caseous nodules. The muscular coat throughout the whole length of the tubes was thickened and very firm. In the subperitoneal connective tissue there were several small miliary tubercles. Microscopic examination showed extensive ulceration of the mucosa, with general infiltration of all the coats of the tube by a small-celled granulation tissue. A few giant cells were observed.

DR. WM. GARDNER said that at the first examination he found the ovaries enlarged and cystic. Both tubes and ovaries were densely adherent. The patient, aged 29, had been married five years; had three pregnancies. The two first were miscarriages, the third and last at full term, forceps delivery, three years ago. Since then "has never seen a well day," repeated attacks of inflammation confining her to bed six to eight weeks at a time; constant pelvic pain; profuse, prolonged, very painful, and over-frequent menstruation. Notwithstanding this, she was very fat, though flabby and anæmic. No evidences of tubercle elsewhere. The patient made a somewhat tedious recovery, and at once

expressed herself as relieved of the old symptoms. With reference to the specimens of tubercular pyo-salpinx, Dr. Gardner remarked that at a meeting of the British Gynæcological Society on 13th June last, Mr. Lawson Tait had exhibited tubercular pus-filled tubes from a patient who also had an extra-peritoneal cyst. This patient and another exactly similar had recovered.

DR. ALLOWAY said he had assisted at the operation, and regarded the case as a very interesting one. Tuberculous disease of the tubes and ovaries is more frequently seen in young unmarried females, and when seen in married women usually results from tubercular endometritis, the disease creeping up the tubes from the uterus. Here, however, the tubes seem to have the disease in the distal extremities, the proximal ends being free from the affection; hence the disease could not have had its origin in the usual way from an endometritis.

DR. MILLS had frequently observed a condition of complete caseation of the sexual organs, not in young birds, but in old cocks and in hens that have bred. It often seems to come on quite suddenly. He lost a pair of birds in the moulting season that had bred very much. Both birds showed marked tuberculosis of the genital organs. Coming on, as it does, in the moulting season, it seems to show that in birds the disease attacks the weakest organs.

DR. BELL said the disease here seems to be inconsistent with most forms of tuberculosis, as the patient had gained weight. In cases even of tuberculosis of the joints, when the disease was very limited, there is usually loss of weight.

DR. RODDICK had seen many healthy, strong men with tubercle of the testicle.

Ovarian Papilloma.—DR. LAFLEUR exhibited the tumor, which was of a reddish-white color and almost entirely solid, there being only a small quantity of mucoid fluid. The walls of the various cysts were covered with papillary outgrowths, nearly filling the entire cavity. In some of the cysts fatty degeneration of the papillary outgrowths was well marked. Under the microscope the papillary nature of the growth was very evident. Each little outgrowth was supplied by a distinct

capillary loop passing into it. The outermost epithelial layer was composed of cylindrical, apparently non-ciliated, cells, the other layers of round or cuboidal cells.

DR. GARDNER gave the following history of the case: The patient, married, aged 60, never pregnant, had suffered for many years from prolapsus uteri, but had otherwise been healthy till a year ago. First noticed a lump in belly in February 1888. This had slowly increased and had become so painful that for several months she had regularly taken morphia. From being very plump she had become very emaciated. When the patient came for operation she was found to have a very severe cough and effusion in the right pleura. This was absorbed, with disappearance of the cough in four weeks. There were no adhesions of any importance and a most favorable pedicle. A considerable quantity of straw-colored peritoneal fluid. The papillomatous growth was confined to the cyst, solidly filling it. There was only one small sac, of the size of a hen's egg, which contained semi-fluid broken-down portions of the growth. Flushing of peritoneal cavity and drainage. Recovery was so rapid that the patient desired to sit up on the twelfth day.

DR. TRENHOLME had exhibited a specimen from a case of ovarian papillomatous cystoma three years ago. Since then he has had the patient under observation, and no return of the growth has occurred. As in Dr. Gardner's case, none of the cysts had ruptured.

Aneurysm of Ascending Arch of Aorta.—DR. LAFLEUR, who presented the specimens, said that the aneurysmal dilatation involved the aorta from the semilunar valves to the middle of the transverse arch. There was no distinct sac, the whole of the vessel between these two points being uniformly dilated. No adherent laminated clot was found within it, but merely a small post-mortem, soft, fibrinous clot. The inner surface of the wall of the aneurysm was roughened by numerous glistening, firm, raised, grey to greyish-yellow atheromatous patches. Most of these appeared quite recent, some had undergone fatty degeneration, and in only one or two places was there any calcareous change, and that very slight. The aorta was moderately thick-

ened, and there was but very slight inflammatory thickening about the dilated vessel. There was slight incompetence of aortic valves, due to dilatation of the orifice. The aneurysm did not reach the thoracic wall, being prevented from doing so by an adhesion of the whole anterior border of the right lung to the parietal pleura. This circumstance would probably account for the absence of definite physical signs in that situation. From the main dilatation of the aorta there was a small secondary sacculated aneurysmal dilatation, situated immediately in front of the trachea, just above its bifurcation. This sac measured an inch and a half by one inch, and could be seen upon the tracheal surface as a convex ovoid projection, which in the natural state must have caused nearly complete occlusion of the orifice of the left bronchus. Over this prominence the mucous membrane was inflamed, and through it could be felt the eroded cartilage rings of the trachea, the tracheal wall being almost perforated. The immediate cause of death was in double bronchopneumonia involving lower lobes of both lungs.

Cystic Calculus.—DR. RODDICK exhibited a large calculus removed from a patient aged 76, who had suffered from symptoms of calculus for nine years, yet the case was not diagnosed. The operation was the supra-pubic one, done in the usual way, but no sutures were put in the bladder walls. The calculus was found in a sac in the wall of the bladder, and was removed with some difficulty; some scales came off, but these were subsequently removed. There was no hemorrhage and the patient's strength seemed to improve, but on the fourth day he died of asthenia. The stone weighed four ounces and was phosphatic, with uric acid outside. No autopsy was allowed.

Cause and Prevention of Urethral Fever.—DR. BELL then read a paper on this subject, which appeared in the February number of this JOURNAL.

Discussion.—DR. RODDICK said in times past, when these cases were more numerous, there was no doubt many were due to want of antiseptic precaution. Twenty years ago he had seen five or six deaths from urethral fever in the hospital, some of which he felt sure were due to want of proper care of the cathe-

ters, which were simply handed to a nurse to clean. He agreed with Dr. Bell that external urethrotomy was the better operation in most cases of severe stricture, but did not believe in complicating it with an internal one at the same time. External urethrotomy, while safer than the internal operation, was by no means as simple an operation, in his opinion, as Dr. Bell had regarded it. He had seen death follow the operation and several times fistulæ persisted. He had great faith in the administration of quinine and aconite in cases of operation on the urethra. He related the case of a man who had been operated on a number of times, and whenever quinine was not given, fever more or less severe followed, but never when the drug had been administered. He gave twenty grains of quinine with or without aconite.

DR. SHEPHERD quite agreed with Dr. Bell as to the origin of many cases of urethral fever. These views were advanced by Dr. R. Harrison in the Lettsomian lectures of 1888. When in cases of enlarged prostate, and when from other causes there was injury to the urethra, if the urine was drawn off by aspiration above the pubes he had never seen urethral fever follow. He thought a distinction should be made between urethral or urine fever and catheter fever, which followed the commencement of catheter life in old people. The latter is probably due to mischief in the kidneys, and is frequently fatal in a few weeks. In these cases, as well as in true urethral fever, rest in bed and catheterizing under ether often prevented the attacks. He could not agree with Dr. Bell that the internal administration of drugs was of no avail. He had frequently seen urine fever averted by the timely administration of quinine. Dr. Palmer of Louisville advocates the administration of boracic acid for some days before catheterization to sterilize the urine. In forty cases operated on only one had urethral fever, and in this case boracic acid had been omitted. He was by no means opposed to the administration of drugs, and had great faith in both opium and quinine.

DR. T. W. MILLS said that all forms of urine fever could not be reduced to one type. No doubt chills and fever frequently follow catheterization or operation, but the occurrence of pto-

maines in the urine will not altogether explain this fact. Irritation may explain some cases. Normal urine action depends on normal ingoing influences, and abnormal on derangement of these. Has opium, quinine or whiskey been given in marked doses before catheterization? These lessen the susceptibility to ingoing influences. He thought the views advanced too narrow, and broader grounds must be taken.

DR. STEWART asked if urethral fever could not be caused by the mere introduction of an instrument without it producing any abrasion.

DR. RUTTAN could not agree that the group of symptoms known as urethral fever were of nervous origin. He thought that there were many arguments in favor of the ptomaines theory. The toxic action of urine when introduced into the circulation is well established. Bouchard and Gautier have, besides, shown that urine partially decomposed contains alkaloidal bodies, some of which are toxic and others harmless. These all act as depressants; they lower temperature and blood pressure, and slow the pulse. On the other hand, we see in urethral fever toxic symptoms of an opposite type, as evidenced by rise of temperature, quick pulse, and other symptoms of increased tissue change; then, if due to alkaloids, must be caused by some as yet undiscovered constituent of decomposing urine. He could not see why it was absolutely necessary to assume that the urine underwent decomposition in contact with the wound, as Gaucher, in some recent experiments, has shown that the extractives of normal urine—creatin, creatinin, exanthin, etc.—in very small doses, were able to produce serious systemic disturbance, and, if continued, of inducing acute nephritis, anuria, and death. Bouchard, besides, has shown that urine normally contains physiological alkaloids (leukomaines) of high toxic powers. The result of the disintegration of these answers the argument of Dr. Shepherd against the ptomaine theory, as rest in bed is just the condition under which urine is excreted with smallest toxic powers. The poisonous ptomaines are found in the urine after physical or mental exertion, early morning urine being devoid of toxic power, while that at night is highly

poisonous when introduced into the circulation. Furthermore, if urethral fever is not due to alkaloids, it is at least a curious coincidence that those drugs which are most in favor in the treatment of such cases are alkaloids, and many of them physiological antidotes to ptomaines already investigated. Thus aconite is an antidote to Brieger's neuridin, and others are counteracted by opium and morphia. He could easily see how boracic acid was effective, as it is excreted unchanged by the kidneys, and would keep the urine from decomposing.

DR. BELL, in reply to Dr. Roddick, said he did not perform external urethrotomy, but merely opened the membranous urethra for purposes of drainage. If the tube was retained for but two or three days no fistula could result. He thought the catheter fever of old men was different from the urine fever following operations on the urethra of apparently healthy men. He had treated the question from a purely clinical standpoint, and did not especially consider its physiological or chemical bearings. From his point of view, what he considered necessary to prevent urethral fever were (1) to prevent lodgment of urine in contact with a wound of the deep urethra, and (2) to prevent its decomposition in such a situation.

CHATHAM MEDICAL AND SURGICAL SOCIETY.

Annual Meeting, February 1st, 1889.

The SECRETARY (Dr. Charteris) read a report of the past year's work of the Society, and regretted, owing to his absence in Europe, that the Society had not been called together before.

The election of officers for the year 1889 was then proceeded with, and resulted in the election of Dr. T. K. Holmes for President and Dr. Duncan for Secretary; after which, at the invitation of the retiring president (Dr. Fleming), the members dined together at the Grand Central Hotel.

Stated Meeting, Feb. 18th, 1889.

T. K. HOLMES, M.D., PRESIDENT, IN THE CHAIR.

The PRESIDENT briefly addressed the meeting. He returned thanks for the honor conferred, spoke in complimentary terms

of the past work of the Society, of the agreeable and fraternal relations these meetings engendered between members, and urged them to keep up an interest in the work of the Society and endeavor to make the meetings even more profitable and pleasant than they had been in the past.

Malignant Disease of the Liver.—DR. McKEOUGH presented, through the courtesy of Dr. Jenner of Kingsville, a sarcomatous liver. The disease was limited to the right lobe, which was enormously enlarged, the left lobe being apparently healthy. The weight of the diseased organ was nearly two pounds. Section showed masses of dark-clotted blood and a dark grey brain-like substance, which, when placed under a microscope, presented small, round, nucleated cells. It was removed from a child 19 months old, whose family history was free from hereditary taint of any kind. Had never been a robust child like the other three children in the family. When a year old the child would cry out and make other manifestations of pain if grasped about the waist. Four months before death the mother first noticed an enlargement in the right hypochondrium and a general failure in the child's condition. Was seen by Dr. Jenner a month subsequently; was greatly emaciated, peevish, and sallow in color; temperature normal; pulse 108. In the region of the liver was a large, smooth, globular tumor extending about two inches below the ribs and markedly prominent in situation of gall cyst. This was tapped, but before tapping, diagnosis was between hydatid cyst and sarcoma, afterwards the latter. Pain was never a prominent symptom; never very tender on pressure; jaundice never marked.

Placenta Prævia.—DR. BACKUS read notes of a case. It was the patient's third pregnancy, and she was, when first seen, between the seventh and eighth month, and had symptoms of placenta prævia hemorrhage, but no pain. She was ordered to bed and black haw administered. The flow ceased in a few days and she got up. Two weeks later he was again sent for; found the patient in labour and flowing profusely. The os was dilated to about the size of a half dollar and the placenta completely covering it. In separating the placenta with the finger,

it was found attached higher up on the right side than on the left. The membranes were ruptured, the vagina plugged, and ergot administered. The pains soon increased in vigor, and plug, placenta and child were shortly afterwards all expelled together. The uterus was washed out with 1-6000 solution of corrosive sublimate, and the patient's recovery was satisfactory.

Discussion.—DR. DUNCAN thought that the result justified the management of Dr. Backus' case, but referred to Lusk's advice that after the seventh month labor should always be induced, as the mother's jeopardy is much lessened and the fatality of the child is always great. He had had the care of two cases of placenta prævia, both successful. One, a woman four months pregnant, had severe flooding; plugging was the treatment instituted. The other case was interesting, inasmuch as it sustained Mueller's theory that the condition of placenta prævia was due to arrested abortion, the placenta being separated from its normal attachment in the upper segment of the uterus and engrafting itself above the internal os. The patient, who had a persistent retroflexion of the uterus, became pregnant. At about the second month she was threatened with a miscarriage. The pains and hemorrhage were, however, controlled, and she went to full term, when it was discovered she had placenta prævia (lateral implantation) and a shoulder presentation. Separation of placenta and turning were followed by a successful issue.

DR. HOLMES stated that having fairly tried the various means recommended for the treatment of placenta prævia, he was firmly convinced that a well adjusted antiseptic tampon was the best means at our command. He emphasized the importance of not removing the tampon unless marked symptoms of septicæmia developed. He had left them *in situ* for forty-eight hours without any ill consequence. In two cases in which the tampon was removed before labor was concluded, the flow of blood was so great in the short time elapsing before another could be introduced, although it was prepared and ready for that purpose, that the patient's condition, which previous to the removal of the tampon was good, became extremely critical. In nine cases which he had either under his care or had seen in consultation

there was no history of an aborted miscarriage. He was of the opinion that labor should always be induced as soon as this condition was discovered, as the more hemorrhage the less are the chances of the woman's recovery. He also considered a physician culpable if he leave the house of a patient after discovering that she has placenta prævia, unless a competent assistant be left in charge.

DR. BACKUS also read the history of a case of acute strangulated inguinal hernia upon which he had recently operated successfully.

Reminiscences of Hospital Practice.—DR. CHARTERIS read a paper descriptive of a recent visit to the hospitals of London and Edinburgh. He spoke highly of the Edinburgh post-graduate course, which he had the privilege of attending, especially the gynæcological department under the charge of Drs. Berry Hart and Haliday Croom. He had the privilege of listening to Dr. Owens' paper on *Arthrectomy* at the Royal Medical and Chirurgical Society. He thought the operation admirably suited to cases of chronic, suppurative or pulpy diseased joints, especially the knee, in cases in which the bones were not too greatly implicated and the subject free from tuberculosis. He thought arthrectomy would, in the future, frequently take the place of resection. He briefly related the history of some cases of laparotomy seen at the Samaritan Hospital, and referred to the rival claims of Drs. Thornton and Bantock *re* antiseptics.

Abscess of the Cerebellum.—The PRESIDENT read notes of a case of cerebellar abscess seen with Dr. Fraser of Thamesville. The subject was a man aged 30, with a previously healthy personal history, but a decidedly tuberculous family history. There was a distinct aortic obstructive murmur, but the heart lesion never apparently caused any discomfort, except that he got out of breath in running. When a child he had an inflammation of his left ear, and since then a constant otorrhœa and almost complete deafness in that ear, the drum being perforated. The right ear was normal. He consulted Dr. Fraser about the 1st of January complaining of being "bilious," bad taste in the mouth, dizzy, and feeling dull and heavy. His ear at this time was

slightly more painful, but was discharging as freely as ever, and continued to do so throughout his illness. About two weeks later he was again seen, complaining more of the pain in his ear and a decided staggering gait when he attempted to walk. His pulse and temperature were normal, and he had a good appetite. During the succeeding week he suffered a good deal from the pain in the ear and left side of head and face, but this, with the tendency to stagger, gradually subsided. In the course of another week the pain, however, returned, more diffused than the former attack—the left side of head and face, the top of the head, the right temple, and the back of the neck being implicated. There was also great irritability of stomach. These symptoms increased in severity until morphia ($\frac{1}{4}$ -gr.) was injected hypodermically. There was also some rigidity of the muscles of the back of the neck. About a week before death he had a chill, and when seen shortly after his temperature was 102°F ., being the first time that his temperature was above 99° . His mind was still clear, and he had not complained of any dizziness or staggering since the early part of the case. He became semi-comatose about thirty hours before death, the eyes were drawn strongly to the right side, and among the last complaints he made was of a numbness of the left side of the body. He appeared to have good use of his limbs, and would frequently pass his hands over his forehead or pick his nose. The respiration became somewhat of the Cheyne-Stokes character. There was no muscular twitching or jerking. The post-mortem showed adhesions of dura mater to temporal and frontal bones on right side, considerable congestion of membranes, and an abscess in the cerebellum containing v vi to v viii of pus; it came nearest the surface at point just external to the root of seventh nerve on the left side, and extended deeply into the substance of the cerebellum towards the median line. There was no marked morbid appearance about the petrous portion of bone. An opportunity was not given to Dr. Fraser to examine the interior of the bone.

Selections.

Treatment of Epilepsy.—The following are the details of Professor Kowalewsky's (of Kharkow) treatment of epilepsy, as given by him in a recently published article (*Russ. Arkiv. Psych. and Neurolog.* xii, 3, 1888). He takes cases which he considers possibly curable (those in which the epilepsy dates back less than ten years) and in these he reckons the minimum period for treatment at two years. This he divides into four equal portions or semesters for convenience in detailing his method. During the first half year he gives his patient a drachm of bromide of soda or such other bromide salt as is selected, each twenty-four hours, adding usually three to five grains of iodide of soda, and giving the combination in two or three equal doses in the morning, before dinner, and at night in a large quantity of water. In case there follows any decided adynamia from this quantity of the bromides he decreases the dose somewhat, or in some cases intermits it for four or five days. During this semester also he stops the treatment during the catamenia in female cases. In order, however, to have this plan succeed, it is necessary to allow a good supporting diet, though preferably one of milk and vegetable food. If there exists any scrofulous taint, cod-liver oil or iodide of iron is also administered. In case there should be any symptoms of brominism, such as headache, neuralgia, etc., in the beginning of this treatment, it is not necessary to stop the treatment; as soon as it relaxed a little these symptoms disappeared. Much advantage is had in these cases from warm baths and rubbings. Usually this treatment causes cessation of the attacks so that the patient is free from them during the last three months of the half year. Toward the close of the semester the medication is stopped for a period of from two to six weeks before beginning it again. In the course of the second half year the quantity of bromide and iodide is reduced one-half and given in the same way, and at its end there is again an interval of two to six weeks. In third semester only the bromide is given and in doses of five to ten grains, morning and night, keeping up the same regimen and

diet. In the fourth half year he begins with only five grains per diem, and later only gives the medicine at intervals of one, two, three, four or six days. After this the bromides are discontinued and the patient is given small doses of nitro-glycerin or, at intervals, in some cases, tr. simulo (*capfaris coriaciæ*), which is said to have a marked influence over epileptic attacks. Prof. Kowalewsky claims that he has by following out this plan of medication already had quite a number of cures, in which the attacks have not reappeared for over ten years, and that he has lost faith in the incurability of epilepsy. Of course, in cases in which there is any specific or tubercular cause or complication the treatment must be adapted to meet the special conditions. As regards other than medicinal treatment the author recommends electricity as an adjuvant in certain cases, but cautions against its employment in any case in which there is a tendency to cerebral hyperæmia. He also found benefit in weak, irritable, anæmic cases from daily warm baths, of temperature of 25° to 28°R. (88° to 95°F.) for fifteen or twenty-five minutes, watching the condition and nutrition of the patient, and when these are improved using baths gradually lowered in temperature and not so prolonged. In some cases combined baths and electrical treatment are of advantage. The author's ideas as regards diet are liberal, but he says that for all cases of epilepsy taken together, a vegetable and milk diet is best. Alcohol he forbids even in medicine, at least in the beginning of the treatment; he says he has seen the epileptic attacks revived by even a few drops of alcohol. Tea he allows in moderation, but he advises that coffee, chocolate, etc., be dispensed with, at least during the treatment. There are other points of interest in the article, but the above are the most noteworthy, especially the success that seems to have attended the author's method of using the bromides. The quantity given is certainly not large; not even in comparison with his own treatment in other cases, for he recommends as much as three or four drachms *per diem* in cases of epileptic furor. There would seem to be some special advantage in the method or the regimen presented to bring about such specially favorable results.—*American Journal of Insanity*, Jan. 1889.

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THE OLFACTORY CENTRE.

At a recent meeting of the Medical Society of London, Hughlings Jackson gave an account of a case of epilepsy with a marked *olfactory aura*. The patient, a woman, aged 53, began a year previously to have fits, the first symptoms being tremors of the hands and feet. She then saw a little black woman who was always engaged in cooking. She also complained of a horrible smell, a subjective sensation which she was quite unable to describe. She stood with her eyes fixed for a short time, and although she did not lose consciousness, she passed urine during the attacks. Paralysis of the right arm and leg supervened, and also double optic neuritis. There, however, was no defect of sight, neither loss of smell, only a disordered subjective sensation. She gradually passed into a condition of dementia. At the post mortem, a sarcomatous tumor was found occupying the whole of the anterior end of the temporo-sphenoidal lobe, enveloping the amygdalate nucleus. It did not affect the grey cortex of the hippocampal convolution. The dentate nucleus and the fibres of the internal capsule were compressed by the growth. The case is of the greatest importance as it affords very strong evidence of the position of the olfactory centre. It is the first authentic case of this variety of epilepsy, where proof has been produced of an actual lesion in the temporo-sphenoidal lobe. In the report no mention is made whether the patient was able to localize the olfactory aura in the nostril of the same side as that on which the lesion was situated. It has been shown that the olfactory centre fibres, unlike the other cerebral centre fibres, do not cross. The case further illustrates the value of experimental

physiology, for Ferrier, some years ago, pointed out that the hippocampal lobule and neighborhood is specially related to the sense of smell.

REJECTION OF THE B.A. BILL.

The Bill introduced by Mr. Lynch to allow possessors of the B.A. degree to proceed to their professional studies without further preliminary examination has been rejected by the Legislative Council, after having passed the Legislative Assembly. It is now many years since Sir William Dawson first pointed out the great injustice suffered by the universities of this Province in excluding their graduates from privileges granted to them in every civilized country. The end of this blind and ignorant opposition cannot now be far away. The sooner this is recognized by our legislators the better for all concerned.

NOTES AND COMMENTS.

Amongst New England's sons and Harvard graduates who have done good work in the profession, John C. Dalton will take rank in the first row. There had been experimental physiologists before him in the United States—good ones too—such as Beaumont and Draper, but he was the first professional physiologist, and so far as I know, the pioneer of that small, but distinguished band of men, who in this practical country and money-making age, devoted themselves exclusively to pure science. After graduation at Harvard in 1847, he taught physiology successfully at the University at Buffalo, the Vermont Medical College, the Long Island College, and (1855) succeeded to the Chair at the College of Physicians and Surgeons in New York, of which Faculty he was for nearly thirty years a devoted member and one of its most distinguished ornaments. His physiological work was excellent, embracing a wide range of subjects, but he will be best remembered by his studies on the corpus luteum, on the bile, on the placenta, on cerebral localization and on the anatomy of the brain. His text-book on physiology passed through seven editions, and it is no disparagement to the works of other American authors to say that there were special

features which made it the most important book of the kind ever issued in this country. Well arranged, clear in style, beautifully illustrated, free from all superfluous matter, it was a first favorite with students and teachers. Of no text book have I such grateful memories. What a gem in text and figures was the section on embryology in comparison with other works fifteen years ago! How straight it made crooked paths! How plain the rough places! The man and his book were of a piece—good throughout. Alas! that for both, in the general profession, oblivion is inevitable, but let us be thankful that in each succeeding generation a remnant, at least, will always know and cherish the name of John C. Dalton.

My note in the January number of the *JOURNAL* referring to the important part played by Dr. Oliver Wendell Holmes, in spreading correct ideas in the profession on the subject of puerperal fever, and the question which I broached whether he would rather have written his essay on this subject or certain of his beautiful poems, has elicited from the Autocrat himself the following characteristic reply:

“I have rarely been more pleased than by your allusion to an old paper of mine. There was a time certainly in which I would have said that the best page of my record was that on which I fought my battle for the poor poisoned women. I am reminded of that essay from time to time, but it was published in a periodical which died one year after life, and it therefore escaped the wide notice it would have found if it had been printed in the *American Journal of the Medical Sciences*. A lecturer at one of the great London Hospitals referred to it the other day and coupled with it some fine phrases about myself which made me blush either with modesty, or vanity, I forget which. I think I will not answer the question you put me. I think often of the “Chambered Nautilus,” which was a favorite poem of mine, if I wrote it myself. The essay only comes up at long intervals—the poem repeats itself in my memory, and is very often spoken of by my correspondents in terms of more than ordinary praise. I had a savage pleasure, I confess, in handling those two professors—learned men both of them—skilled experts, but babies as it

seemed to me in their capacity of reasoning and of arguing. But in writing the poem I was filled with a better feeling, a higher state of mental exaltation, and the most crystal clairvoyance, as it seemed to me, that had ever been granted to me. I mean that lucid vision of one's thought and all forms of expression which will be at once precise and musical—which is the poet's special gift, however large or small in amount or value. There is a more selfish pleasure to be had out of the poem, perhaps a nobler satisfaction from the life-saving labor."

As might be expected, Dr. B. W. Richardson's novel *The Son of a Star*, is not lacking in interest. It is a tale of the second century, the scene of which is laid in Britain and Palestine, and the chief incidents relate to the revolt of the Jews under Bar-Kochba. We get a truly graphic account of the state of the Roman world at that period, interesting glimpses of the restless and mysterious Hadrian and, best of all, pictures of life in Britain drawn by no prentice hand. It was scarcely to have been expected that so devoted a physician and so ardent a social reformer as the author could have, in a work of fiction, dissociated himself so thoroughly from his profession and his theories. It is true a gentle old physician does appear, but he is not given a prominent place, nor does he discourse on the beauty of cleanliness or the deadliness of alcohol.

WILLIAM OSLER.

Obituary.

ROBERT PALMER HOWARD, M.D.

It is with deep sorrow that we chronicle the death of Dr. Robert Palmer Howard, the honored head of the Medical Faculty of McGill University. He has passed away, but he has left behind a memory and a record of a beautiful and noble life. To the thousand graduates of McGill scattered far and wide, his death will be felt as a keen personal bereavement. Few medical teachers in this or any age have wielded such an influence for good over students as Dr. Howard. In our next number a full account of his life and labors will be given.

DR. JOHN ROWAND.—We regret to hear of the death of Dr. John Rowand, for forty-two years a leading practitioner in Quebec. Dr. Rowand, during his long professional life, passed through many trying scenes. Shortly after graduating he was called upon to fill his share in combating the terrible ravages of "ship fever," and again in 1849, when cholera was claiming its thousands, he was found at the post of duty.

JOHN C. DALTON, long one of the best known men of the teaching portions of the medical profession, has passed away; but he has left behind more than a name. The impress he made on the men and the literature and the science of his day will not soon be erased. In the teaching of modernized physiology he was a pioneer; he anticipated the better day which is now rapidly dawning. He is credited with being the first physiologist in America to introduce experiments involving vivisection into his lecture-room. If he could lecture as attractively as he could write, his students must have been rarely fortunate men. He has produced perhaps the most readable text-book of physiology that has ever been written; and its popularity has been proven by the fact that it has passed through more editions than any other work of the kind in the English language, unless it be Carpenter's. Though he made some original investigations, it is chiefly as a teacher and writer that he moulded the thought of his day. His atlas of the brain was a work most timely and the edition proved too small for the demand. Dalton was a representative of a type of the physiological teacher we hope may not become extinct. He was broad; he kept himself in sympathy with the real needs of the medical student of his day. He never concealed the great principles of his science beneath the unessential details or mere technique. As a man he deserved and won universal respect. At a ripe age he has left the scene of his labors and their fruits. A grateful generation should do something to perpetuate his memory.

Medical Items.

—A centenary festival is to be held in Munich to commemorate the distinguished services to science of Ohm, the great physicist.

—The battle between the Members' Association and the Council of the Royal College of Surgeons, has assumed an acute form. It is easy to predict the result.

—We are sorry to learn that Prof. Westphal, of Berlin, is so ill that he has been compelled to resign his professorship. Erb, of Heidelberg, is mentioned as his successor.

—Prof. Kahn, of Prague, succeeds the late Prof. Bamberger as director of the second Medical Clinic in the University of Vienna. A third Medical Clinic has been instituted in the same university, the directorship of which has been entrusted to Schrötter, the celebrated laryngologist.

—The annual meeting of the National Association of Railway Surgeons will be held at St. Louis, Mo., on Thursday and Friday, May 2nd and 3rd, 1889. The prospects are that this will be one among the largest gatherings of medical men ever assembled in this country. Dr. W. B. Outten, of St. Louis, is the chairman of the committee of arrangements, and everything will be complete for the accommodation of the surgeons. Any information desired can be had by addressing the secretary, C. B. Stemen, M.D., Fort Wayne, Ind.

RETURNING DIPLOMAS.—The Minister of the Interior of the Ottoman Empire has recently promulgated a decree whereby the diploma of a deceased physician or pharmacist must be returned to the medical school. This is an excellent measure, in so far as it will prevent, in a large manner, the use of these diplomas by quacks who have heretofore availed themselves of these opportunities. A case of this character occurred in Algeria not long since, a druggist's assistant having been discovered as practising under the protection of the diploma of a deceased physician.—*St. Louis Med. and Surg. Journal.*

A BULLET IN THE CHEST FOR THIRTEEN YEARS.—Dr. C. R. Macdonald recently removed a rifle bullet from a man which had been in the chest for thirteen years. The case is chiefly remarkable from the fact that the bullet had remained in the

pleural cavity for so long a time without setting up pleurisy. It entered the back of the shoulder immediately below the spine of the scapula, and probably entered the pleural cavity by penetrating the intercostal muscles. The operation was performed with antiseptic precautions, and the wound soon healed. A splinter had been removed from the wound of entrance some months after the accident, which occurred to the man whilst marking at a rifle range in Berlin. The bullet had gravitated to the lower part of the chest.—*Lancet*.

ANTIPIRYNE IN SEA-SICKNESS.—As this drug has been both lauded and condemned as a remedy for relief of this distressing malady, the personal experience of a prominent physician in its favor will be read with some interest. Prof. Wm. Goodell of Philadelphia writes as follows to the *Medical Record* of recent date:—"Having lately crossed the Atlantic twice, I had ample opportunity in myself and in others to test the virtues of antipyrine in sea-sickness. Both the outgoing and the return voyage began with a storm which lasted three days, and almost all the passengers, including myself, were laid up. I took in divided doses 30 grains of antipyrine on each of these days, and although they did not enable me to go on deck while the storm was at its height, yet I was made comfortable enough in my berth to pass away the time in reading. Other passengers who took this medicine on my recommendation agreed with me that, while the remedy did not cure them of their sickness, it made it more bearable by lessening their nausea, by relieving them of their headaches, and by soothing the pains in their bowels. But it was in the sequelæ of sea-sickness that I found the antipyrine of great value. It acted like a charm for the headache, the abdominal pain, the nausea, and other nerve-phenomena which so often linger on indefinitely after the brunt of sea-sickness is over. By five-grain doses given every two hours during one morning, I got on deck the next day two ladies, who lay on their backs for over a week, unable to keep down any nourishment whatever. One of them was a lady physician from Syracuse, N.Y., whose name I have forgotten, but who, I hope, will see this letter and corroborate my statements. The first dose made a new woman of her. This success gave the antipyrine such a reputation that my stock was soon exhausted by a run upon it from those who were suffering from the after-effects of sea-sickness, all of whom were invariably relieved by it."—*College and Clinical Record*.



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FROM A PHOTO. BY NOTMAN.

THE LATE DR. R. P. HOWARD,
Dean of the Medical Faculty, McGill University.