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INTRODUCTORY LECTURE
ON
HYGIENE, PUBLIC HEALTH AND PREVENTIVE MEDICINE.

BY

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In beginning the study of a new subject, it is always well to obtain as clear a view as possible of the field which is to be explored and cultivated; its scope, its limitations, its possibilities and the nature of the work which is to be performed in it; and the more clearly these are understood at the beginning, the more intelligently and successfully will the work be carried on.

In entering, therefore, upon our reorganized course of Hygiene, I have thought it well to devote a short lecture to a survey of the ground to be covered, and an outline of the manner in which we propose to utilize it.

It is impossible in a single word or sentence to define what Hygiene is, or what are its scope and its limitations. The word itself means *health*, or things pertaining to health, being derived from the name of the Greek Goddess of Health, Hygieia, and in its widest sense, therefore the study of Hygiene means the study of all things pertaining to health, whether beneficial or detrimental. This, of course, includes the study of Disease, which is strictly a department of Hygiene on account of the effect which disease has upon health. But the *Science of Medicine* has long since claimed as its own particular province, the study of Disease, and Hygiene has been glad largely to concede the claim, having still an ample territory over which there can be no dispute. But there is also a large area which is common to both, and over which neither can claim exclusive jurisdiction.

Health and Disease may be looked upon as the antithesis of each other, having much the same relations as light and darkness, pleasure and pain, good and evil. But opposite as these things may seem to be, we cannot in our minds disassociate them, for light would scarcely be realized as light if we were ignorant of darkness, pleasure would scarcely be so enjoyable if we had never felt pain, and we could scarcely fix a standard of health, if it were not possible to contrast it with disease.

In this way the study of Medicine and the study of Hygiene meet and overlap each other, the one cannot properly be understood without some knowledge of the other ; the Physician in studying Disease fixes his attention upon those points in which it differs from Health, while the Hygienist in adjusting his standard of Health must be able to recognize the signs and symptoms which indicate Disease.

This common ground of study between the Physician and the Hygienist or Sanitarian, instead of producing antagonism or divergence, really binds them together, the studies of the one passing imperceptibly into those of the other, so that every Physician becomes more or less a Hygienist, and nearly every Hygienist becomes, or at least qualifies himself to be a Physician. Both are working to rid the world as much as possible of Disease, but while the Science of Medicine aims both at the prevention and cure of Disease, the Science of Hygiene occupies itself almost wholly with its prevention ; and inasmuch as prevention is always better than cure, Hygiene as a part of Medicine is assisting in the noblest part of its work.

It may be said therefore, that the peculiar province of Hygiene is,—the study and practice of all those means that tend to preserve and to improve health, and to prevent disease.

In its most comprehensive sense it includes all living things, but in its usual restricted sense it applies more particularly to the human race, with its subdivisions into states or nations, provinces, communities, families and individuals ; a common sub-division of the subject being into : (a) private or individual Hygiene ; (b) public Hygiene and (c) international Hygiene.

In its highest sense also, Hygiene concerns itself not only with the physical health of individuals and communities, but also with their mental, moral and even their political health.

We have seen that the functions of the sanitarian and of the physician, though having much in common, differ chiefly in that the one studies health and endeavours to preserve it, while the other studies disease and endeavours to cure it, and their relative spheres of action seem tolerably well defined.

But though in the abstract, health and disease seem to be almost the opposite of each other, in practice they are found often to shade almost insensibly into each other, making it difficult to tell where the one ends and the other begins, and making it impossible to give an exact scientific definition of either of them. Perhaps the simplest definitions are,—that health means that condition in which all the functions are performed naturally, while disease means a condition in which at least some of the functions are more or less unnatural. In these definitions, of course the whole difference turns upon what is to be understood as natural or unnatural, and how are we to decide as to what is natural ?

We shall probably find the nearest approach to it in the average course of existence of individuals in a prosperous community. They spring from a healthy parentage ; they are born at full time ; they grow to healthy maturity ; they produce healthy off-spring ; they gradually fade and wither ; they die peacefully and return harmlessly to dust.

But disease may alter all this ; parentage may be unwholesome or depraved ; birth may be difficult or untimely ; growth may be irregular or stunted ; progeny may be misshapen or feeble, or may be wanting altogether ; age may be laden with infirmities ; death may come at any time in a virulent and painful form ; and even the lifeless clay by reason of its virulence may spread pestilence and death among thousands of innocent victims. How different the pictures. Health represents peace, happiness and prosperity ;—disease represents grief, misery and disaster.

What nobler work, then, than to strive to blot out the latter, and to develop the former to still greater excellence ?

But, it may be asked, how far is it possible to exterminate disease and to replace it by health and soundness. Theoretically it ought to be possible to exterminate disease, inasmuch as it is an unnatural condition, and by strict obedience to natural laws, it ought to be made to disappear. But natural laws, like all other laws, are constantly broken ; and indeed anything like perfect obedience to them is scarcely to be expected. They are often imperfectly understood, and when understood they are often beyond our control, and only a partial success in our work can therefore ever be looked for.

But though we can never hope to completely eradicate all diseases, we may confidently expect to exterminate a large number of them, and to so modify and control a still greater number, as to render them comparatively harmless, thus reducing the sum total of misery and mortality in a very important degree. In proof of this we have

only to think of what vaccination has done for smallpox, what anti-toxin is now doing for diphtheria, what improved sanitary measures have done for typhus fever, for scurvy and for preventing the spread of cholera and other epidemics ; and in Sanitary Science, as in the other Sciences, it seems impossible to limit the extent to which progress and improvement are to be carried.

And how have these successes been achieved ? By carefully studying the laws of Health and the natural (or unnatural) history of Disease, and by applying for their elucidation the modern methods of scientific investigation.

Physiology teaches that in an ideal state of health, in adult life, the metabolism of the tissues and organs is perfect : that the processes of waste and regeneration exactly balance each other, and that to maintain this balance, the ingesta and excreta must be in corresponding proportion. Were it possible in a healthy body, and with pure materials, always to maintain this equality, it would seem that the process should go on indefinitely, and that something approaching immortality should result ; but with our earthly environment no such perfection is possible ; under the most favourable circumstances the metabolism is only approximately perfect, the materials are only approximately pure, and almost from the beginning, a process of gradual deterioration commences, which, aided by other influences, ultimately ends in degeneration and death, and this without the supervention of what can properly be called Disease, but only as the result of processes rendered imperfect by complex disturbing forces which pervade our whole surroundings.

As I have said, this process is not Disease. There is nothing unnatural about it ; it is common to all living things with which we are acquainted, and when it ends in the usual way, we say death has resulted from natural causes or from natural decay ; indeed we are constrained to accept this result as the nearest approach to perfect Health which is attainable in this world. It is in short the natural or normal condition of all earthly living things.

If then we are to accept this as our type of Health, what is Disease supposed to be ? It must at least be something appreciably different, either in degree or in quality ; something added, something taken away, or something altered and perverted. A change sufficient to convert a natural or normal process into one which is measurably unnatural or abnormal.

It is the function of the Sanitarian by all means in his power to *prevent* these changes. When the changes have occurred it becomes the function of the physician to endeavour to remove or counteract them and restore the processes to their natural or normal condition.

But to be in a position to prevent Disease, the Sanitarian must endeavour to ascertain its causes, and the manner in which these causes react upon the organism in producing Disease.

As Health is dependent upon the maintenance of a proper balance between all the functions, and an adequate supply of pure materials to repair the constant waste, and maintain the healthy integrity of the tissues and organs, we naturally look for the causes of Disease among those circumstances likely to disturb this balance, or to vitiate or destroy this healthy integrity of structure.

The causes of Disease, however varied and numerous, may virtually all be said to act by interfering with or vitiating healthy nutrition. Most of them are connected with the ingesta and find entry to the system along with them, being either normal ingredients in improper proportion, or foreign substances abnormally mingled with them. Such causes are to be met with in the air we breathe, in the food we eat, and in the fluids we drink. Certain other active causes find entrance through wounds or abrasions, and still other causes and influences react upon the body from without, such as changes of temperature or of atmospheric pressure, physical and mental exhaustion, &c.

Among all these causes of Disease none have of late years attracted so much attention as those connected with the so-called Germ Theory. The class of Infectious or Zymotic Diseases, with others analogous to them, having been shown to depend upon specific organisms or germs for their origin and propagation, the study of these organisms in all their relations to disease has distinctly been brought within the province of Sanitary Science.

The constantly improving processes of Chemical and Physical research are also being daily brought more and more into the work of Sanitary investigation, more particularly with reference to air and ventilation, water and other beverages, and food with its adulterations. In like manner some knowledge of Architecture and Engineering, as applied not only to private dwellings, but to hospitals, schools, prisons and other public buildings, as well as to systems of drainage and other matters, is every day becoming more imperative.

There are many other directions in which Sanitary Science is extending its boundaries, and the area over which it is exercising control is daily widening in all matters in which the health of individuals and communities is concerned.

The hitherto prevailing system of the Unification of Sanitary Science is therefore no longer adequate to its requirements. No single teacher, however versatile and accomplished, can longer hope to do even moderate justice to so extensive a subject; but thanks to the generous endowment of this Department by our Chancellor, Sir

Donald A. Smith, we are at last able to extend the scope of its teaching in a degree commensurate with its importance, and to give to it that Composite character which the diversity of its interests demands. We have been able to secure for Hygiene the active co-operation of workers in other Departments of the Faculty. Dr. Ruttan, Professor of Practical Chemistry, who has been associated with me for several years, will still further extend the work in Sanitary Chemistry and Physics, more particularly in connection with water, soil, food and air ; while Dr. Adami, Professor of Pathology, and Dr. Wyatt Johnston, Lecturer in Bacteriology and Medico-Legal Pathology, will contribute a very complete course of instruction in Bacteriology in its relations with Preventive Medicine. This part of the course will include the Biology of the Bacteria, methods of culture, staining and sterilization, bacteriological examination of water, air, soil and animal fluids and secretions, antiseptics of wounds, Serum Therapy, Epidemiology, disinfection, quarantine, &c.

Ample means of illustration, with Microscopic and Laboratory facilities will be available in every part of the course ; and to make the means of illustration still more effective, an extensive working museum of models, specimens, diagrams and Sanitary apparatus of every kind is being prepared, and will add greatly to the efficiency of the course.

It is hoped also that a portion of the Lectures on Architecture and Engineering in the Faculty of Applied Science may, by suitable reciprocal arrangements, soon be made available for students in Hygiene.

In thus expanding the course and providing for additional study in many directions, care has been taken in the interest of the students, not unnecessarily nor unduly to increase their labour ; for much of the additional work will be utilized in other Departments, chiefly in Pathology and Practical Chemistry, so that unnecessary repetition and duplication may be avoided.

The course of Hygiene, Public Health, and Preventive Medicine as thus remodelled and extended, will henceforth take rank as a full course, becoming one of the most prominent of the third year, a position to which it is fully entitled by its constantly increasing importance.

In concluding this short address, let me remind you, that we do not expect, even with our extended course and facilities, to make you expert Specialists in Sanitary Science, or to qualify you without further preparation to undertake the duties of Public Officers of Health ; but we do expect of you that you will acquire a good knowledge of the principles of the Science, and a sufficient knowledge of its details, to become intelligent critics and safe advisers in all matters connected with Sanitary work.

THE RESPONSIBILITY OF THE STUDENT OF MEDICINE.

BY

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Another academic year has rolled by, and to-day marks the official opening of the sixty-fourth session of the Faculty of Medicine. I say official advisedly, for at least three-fourths of your number have already some time since girded your loins after the summer siesta and started in earnest on the steep and rugged path which leads to the tree of knowledge and, let us hope also the fountain of wisdom. I trust, nevertheless, that a few of the things I wish to say to you may not savor too much of, as the French say, *après diner moutarde*—and that my remarks may be of assistance both to those who are on the road and to those whose journey begins to-day. If one may judge from one's personal experience, a word of advice comes not amiss in such circumstances. I can recollect distinctly the feeling of helplessness, of vague groping and uncertainty, that came over me at certain periods of my medical course—particularly the introduction to a new and unfamiliar class of studies—and many times the advice of a senior college mate or, better still, of one of my teachers served to dispel doubt and bring light out of darkness.

In the first place, on behalf of my colleagues in the faculty, I extend to you all a cordial welcome, none the less cordial because official and collective. You obtain thereby your place in the sphere of intellectual effort, in which we are all units striving toward a common goal, the furthering of the science and art of medicine, and co-incidentally of medical education.

Those of you who are entering these class-rooms for the first time may possibly not have realized the responsibilities—immediate and prospective, and they are not light ones—which such a step entails. The immediate responsibility is that of working earnestly to the best of your ability during the four years of your course, acquiring such knowledge of, and skill in your profession as will make you a credit to the institution that has given you your training and conferred upon you a widely-known and respected degree. The prospective responsibility is the one contained in the oath exacted from you on your graduation-day—to practice medicine: *Caute, caste et probe*. Of the latter I shall say nothing. It shall be the duty of one of my

colleagues, ripened in years and wisdom, to enforce its solemn simplicity upon a chosen few of you at the end of this session.

It is of the first of these responsibilities that I wish to speak. You are beginning, or have begun, the study of medicine presumably with the view of eventually practising that profession. For prudential reasons—to take the lowest motive first—it behoves you from the first to make the very best use of your time. Competition—sharp, not to say at times unscrupulous—which has made mercantile pursuits so uncertain, and in many cases but barely remunerative—has of late years rapidly invaded the professional classes, and medicine in this respect has suffered perhaps more than any other profession.

The absence of state-endowed and state-supported institutions, in which a very high standard of education might be maintained irrespective of revenue, the absence or laxity of state regulation, of private educational corporations, the curse of sectionalism and individualism so characteristic of the western hemisphere, and the apathy of the public in the matter of education in general and medical education in particular—all these factors have tended to produce a mushroom-growth of so-called medical schools (fortunately be it said more among our neighbours than in our own country) from which a yearly brood of doctors of medicine has been delivered upon the unsuspecting public. To many people one degree is as good as another, and it will take them some time, to their cost, and perhaps to yours, before they appreciate the difference between a graduate of a reputable school and one of the mushroom variety. Moreover, your training will have taught you to despise methods which your competitor makes no scruple of using—and in this respect you will be at a disadvantage. But granted that in the long run you have little to fear from competition with the ill-trained physician, is it not a fact that even from the best medical schools the supply of graduates is at least equal to the demand? Ponder this well—if there be any of you who may be tempted to think that a degree is to be won by a minimum of work, and that the profession of medicine is an easy and genteel way of earning a living. For such there is no place in a medical school of the highest standing.

But there is a higher motive, which the majority, if not all of you, will recognize and accept. By working to the best of your ability you are in reality aiding, no matter how little, the cause of higher education in medicine. Wherever you go, in whatever place you cast your lot, you will bear the hall-mark of your Alma Mater, and should be the living embodiment to your surroundings of the high professional ideal which this school has ever aimed at maintaining. This

you cannot be unless you make up your mind from the first to utilize to the fullest extent the great advantages that are offered to you throughout your collegiate course. Moreover, by so doing you will materially lighten the labours of your teachers, and stimulate them to yet greater efforts on behalf of yourselves and those who shall follow in your footsteps.

The highest motive is one that should form part of your very nature, if you are rightly constituted. It is the moral obligation to do your duty by your fellow-creatures. No student can conscientiously receive the degree of doctor of medicine who knows and feels that he has not caused to profit the talent that was entrusted to him. Heaven knows, gentlemen, when you leave these halls—it has been the experience of your predecessors and teachers—your store of knowledge will be scanty enough, even if you have diligently employed your time—a fraction with a very small numerator, and it is with this fraction that you must enter upon your life work—the understanding and care of all the ills the flesh is heir to.

If a due sense of responsibility is incumbent upon you, the majority, who are to become practitioners of medicine, it is all the more imperative for you, the minority—and I trust it may be a large one—who are even now cherishing the idea of yourselves becoming the teachers of a future generation of students, or investigators in one of the many unexplored regions of medical science. The teacher or investigator to be successful must have received the very best possible training, a deep and solid foundation on which to rear a no less solid and harmonious superstructure. In the case of either, failure means not only personal loss from wasted opportunities, but incalculable and progressively increasing harm to others through educational incapacity or lack of "geist," and the publication of immature or faulty researches—for there is none like your practising physician or surgeon to accept without a murmur of dissent the dicta of those who speak *ex cathedra*, be it from the professor's chair or the holy of holies of the laboratory.

How shall you make the best use of your time?—avoiding both Charybdis and Scylla; the whirlpool of overwork, perplexity and ill-health; and the dangerous rocks of temptation, neglect of work and failure. To a great degree this problem has been solved for you in the published time-table of the curriculum. There are, at fixed hours, arranged with due regard to your physical welfare, lectures, clinics, and demonstrations to attend, which will fairly well fill the hours of the day. With regard to these let your chief virtues be punctuality and attention, for your own sake and that of your teachers and

fellow-students. The aim of these various exercises is to teach you to *observe* and to *think*. And here let me repeat the oft-given but ever necessary advice concerning note-taking. Your teachers profess to be exponents, not oracles, and do not expect you to make a stenographic report of their dissertations—a lecture is not to be considered in the light of an exercise in dictation. Note, if you will, the salient points, and at the close of the day you may fill in the minor points at your leisure; it is a good mental exercise and serves to cultivate the memory. Avoid mere memorizing; it is a debasing exercise and will inevitably lead you to the vain and idolatrous worship of facts. Facts are necessary, and those which cannot be established by personal observation must of course be obtained from books, demonstrations or lectures; but they are at best means to an end, and of little value apart from the inferences to which they lead and the principles of which they form the basis.

Might I not add a word of warning to the teachers themselves? We are perhaps addicted to laying too much stress on the practical side of the subjects we teach, assimilating our work more or less to the style of the modern text-book, which is too often a mere agglomeration of facts, true and well-established if you will for the time being, but devoid of that stimulus to thought which the scholarly and philosophical presentation of the growth and development of principles would afford. This defect I freely admit to be more common in the treatment of the final branches of the curriculum than in that of the primary. The ideal series of didactic lectures would be one that dealt with groups of allied morbid conditions, rather than individual ones, showing their fundamental relations, tracing the gradual steps by which the members composing them became differentiated, and outlining the trend of modern thought in the solution of the still vexed questions with which they abound. In other words, the tendency of such lectures would be toward synthesis rather than toward analysis. The penchant of the present period of medicine is towards refinement in subtle distinctions and the investigation of minutiae, which too often result in loss of mental perspective and the consequent inability to grasp broad principles. The type of the ideal lecture I have referred to is well illustrated by the admirable lectures on "Convulsive Seizures," delivered a few years ago by the eminent London neurologist, Hughlings Jackson, in which he develops the theory of functional levels in the central nervous system. Such lectures not only give one a more accurate conception of individual morbid conditions, but throw a new light on familiar phenomena, and open up new avenues of thought and speculation.

Clinics and clinical lectures on the other hand are, or should be, intensely objective, their aim being to cultivate the faculty of observation. It is remarkable in what an embryonic state this faculty exists in the average student. Things that "jump to the eyes," as the French say, very commonly pass unobserved, or in transit between the retina and the higher visual centres undergo such refraction as to result in very imperfect images. Indeed a large part of the clinical teacher's work consists in correcting visual, auditory and tactile impressions in the student, and as this work of educating the senses must of necessity be done individually for each student, it follows that a large proportion of time must be devoted to this part of your technical training. It requires also individual work, *bon-vouloir* and patience on the part of both teacher and pupil. Nothing but the most earnest co-operation on your part can make our teaching successful, for indifference in the taught represses the zeal of the teacher, and freezes the genial current of his soul.

There are in this city ample, very ample, facilities for the acquirement of a good clinical training in large and well-appointed hospitals. It is safe to say that in no other city on this continent is the student in medicine afforded such opportunities of seeing disease from a close and intimate point of view, and of coming into personal contact with the sick. As senior students you are practically allowed the freedom of the wards during certain hours of the day, and all of you have at one time or another a certain number of cases to report on and observe from day to day. In the out-patients department you have daily opportunities of studying the minor complaints, both medical and surgical, which will form the largest part of your future practice, and of familiarising yourselves by repeated examinations, with normal physical signs. Finally, there are the special departments and the maternity hospital, in which systematic instruction is given to groups of students in rotation.

These are great and exceptional advantages, and if you are inclined to think that they are but your due, remember that in many hospitals not only is the opportunity of personally examining and reporting cases absolutely unknown—I had almost said undreamed-of—but access to the wards is only possible in the company of the chief of service or his interne, and the student must rest satisfied with studying disease from the lofty point of view of the amphitheatre. This school can point with pardonable pride to the fact that it was among the first in America to inaugurate thorough and systematic bedside teaching in the hospital, and to insist on personal and individual clinical work. And here I may be pardoned for entering upon a

digression. The system of teaching I have referred to is commonly known as the "Edinburgh method." In reality, it is the German method—though it eventually came into force in the famous Scotch school. Graves, in the introduction to his "System of Clinical Medicine" (published in 1843), speaking of methods of clinical teaching, draws attention to the lack of personal work on the part of the student in the medical schools of Great Britain, and contrasts these with the schools of France and Germany. In France the system adopted was certainly an improvement on the methods in vogue in his own country, but there were still many defects. For the German method, however, he has nothing but praise, and describes somewhat in detail the manner in which the "praktikant" is required to examine, report and even prescribe for cases in the hospital, undergoing on all these points a strict cross-examination by the physician in the presence of his fellow-students.

To return to the theme; I wish to insist on the point that in clinical work you are to be actors, not passive spectators or supernumeraries on the scene. Avoid perfunctory performance of your hospital duties, and when you are reporting a case do so with as much zeal as if it were your first patient in practice. There is no better training than that obtained by thorough and independent examination at the bedside, controlled subsequently by your teacher's criticism. The eliciting of information, the careful sifting and arrangement of the patient's statements—one of the most difficult arts to acquire, and not unlike the cross-examination of a legal witness; the thorough and systematic physical examination—which tests your knowledge of normal signs and appearances; and finally the process of reasoning called into play in making a diagnosis from the data obtained—all these are mental exercises of great value, and require the exercise of your best intellectual powers. The committing of the whole to paper, in the shape of an orderly and well-written report—so seldom met with—cultivates precision of thought and diction—"writing maketh an exact man."

To make rational inferences from correct observations is in a few words the gist of the problem involved in the diagnosis of disease. At times this is an easy matter, given an accurate history and unequivocal signs of disease: at others, the indications are so scanty or obscure as to tax the ablest clinician's powers of observation and reasoning. You may have wondered how in certain cases a correct diagnosis has been reached from isolated and seemingly trivial signs. There is, however, nothing marvellous in this, it is not intuition, nor is there any mystery about it—nothing more than the facility

acquired by long experience based on observation, of forging the missing links in the chain of evidence. You remember Voltaire's story of how Zadig was enabled to give an accurate description of the queen's strayed spaniel and of the runaway steed of the king, without ever having seen either of these animals, but by observing the character of their footprints, and the marks they or their trappings had left on the trees and stones of the path by which they had made their escape. In many instances this is the method by which the diagnostician arrives at his conclusions—the "method of Zadig," or in more modern phraseology, the method of Sherlock Holmes.

There is another aspect to an hospital training—its humanizing influence. It is not possible that two or more years spent in daily association with the sick and the injured should not have some influence for good on your character, and develop in you, at least, the quality of mercy which is not strained. There are foibles to be overlooked and idiosyncrasies to be understood and respected; there are sullen patients and garrulous ones, melancholic patients and cheerful ones, and tearful ones—most trying of all—to each and all of whom you must accommodate yourselves. Kindness, gentleness and courtesy—with firmness in the background for emergencies—are never out of place, and should be meted out in the same measure to No. 15, Ward X., as to Mr. Dividends of Capital street.

I need hardly insist on the importance of faithful attendance in the various laboratories—university and hospital—including the dissecting-room. The hope and the promise of the medicine of the future lie in the extension of laboratory teaching, not only from the educationist's point of view, but from the stand-point of the diagnostician and the therapist. The discovery of the diphtheria antitoxin is still fresh in our minds—a discovery, it cannot be too often repeated, entirely the product of the bacteriological laboratory. Again, in all the clinical laboratories of the great medical centres of the world, investigations are being carried on which are yearly adding to the more intimate knowledge of disease, and more or less directly to further advances in therapeutics. Notably of quite recent interest is the discovery by Widal, that in the action of human blood serum on cultures of the bacillus of typhoid fever, we possess a reliable means of establishing or denying the presence of that disease in the individual from whom the serum has been obtained,—a most valuable addition to the hitherto accepted criteria in obscure cases.

From the purely educational point of view a thorough training in laboratory work is not less to be recommended. For a clear *exposé* of this aspect of the question, and of the value of the ex-

perimental method in medical education, I must refer you to the interesting address delivered three years ago, on an occasion similar to the present one, by one of the members of this Faculty.¹ But "the head and the hoof" (to use an expression of Kipling) of the argument in favour of the educational value of laboratory work is to be found, just as in the analogous case of individual clinical work, in the fact that such work teaches how to observe and to think correctly.

I have outlined somewhat sketchily the programme of your studies as laid down in the curriculum—what may be called the fixtures of the medical course. There remains a considerable portion of time which is not officially provided for. It may be asked how, in view of the amount of intellectual pabulum you are daily required to ingest and digest, the sorely taxed brain can possibly be stimulated to further effort. This is a matter that must be left to the individual worker, and each one must be a law unto himself, remembering the adage—*il ne faut pas forcer son talent*. It is to be assumed that a portion of this time is to be devoted to independent study, and this usually takes the form of reading. If done at fixed hours and not in a desultory way, this may be productive of much good. The object of such reading should be in the first place to revise the work of the day and crystallize the knowledge acquired. The excellent text-books in every department of your work should enable you to do without much expenditure of mental energy. The student of even average ability should find no difficulty in keeping up with the daily work in reading if he bears in mind two cardinal points—to have regular hours and to refrain from memorizing. For the advanced student, who is supposed to have already an elementary knowledge of the subjects he is studying, and possesses or has acquired facility and despatch in his work, there are at his disposal in the library of the faculty, numerous books of reference with which an instructive hour may be spent, comparing the opinions of the masters in our profession. I would dissuade you entirely from devoting much time to the perusal of current medical literature. It is safe to say—and it is a humiliating confession to make—that fully nine-tenths of the material published in the medical press of this country, and perhaps of others, is worthless from an educational point of view—not to say from any point of view,—and you have neither the time nor the mental perspective required to sift the wheat from the chaff. With the student perhaps even more than with the busy practitioner it is "*omne ignotum pro mirifico*." Far better, if you

¹ The Place of Chemistry in a Medical Education, by R. F. Ruttan, M.D., *Montreal Medical Journal*, November, 1883.

want something a little out of the way of routine work, are the essays of Holmes and of Austin Flint, and many others equally refreshing and instructive.

Finally, to those who perchance may still have leisure—though that is barely credible—I would say, dip a little into the history of medicine. What can be more interesting than to try to appreciate the genius and sound common-sense of Hippocrates, to trace the gradual growth of modern ideas from the fantastic superstitions and grotesque practices of the Middle Ages, to realise the condition of mind of those who propounded the “vitalistic,” the “Brunonian,” the “inflammatory” and other equally extraordinary and exclusive theories of disease: or again, to read the lives of the great masters of the profession—Vesalius, Ambroise Paré, Harvey, Sydenham, Boerhaave, Laënnec, Jenner and many others equally distinguished, ancient and modern? At the risk of being called a medical Torquemada, I would suggest as the next addition to the curriculum of studies, a course of lectures on the history of medicine. I firmly believe that the extra labour entailed upon the student, would be amply compensated by the result—the cultivation of the philosophical spirit, the stimulation of a deeper interest in the fundamental discoveries in medicine, and a proper appreciation of the genius of the pioneers in our art, coupled with a due spirit of humility and modesty with respect to our own efforts.

We are only too apt to take for granted as elementary truths, discoveries that in years gone by were the battle ground of the fiercest controversies, and to think that the present period of medical science is the only one that can lay claim to the gratitude of suffering humanity. In the introduction to his “Grundriss der Geschichte der Medicin,” Baas emphasises as follows the value of the study of the history of medicine: “An acquaintance with the history of his science is, however, especially indispensable to the practical physician, if he would thoroughly comprehend and penetrate the secrets of his profession. To him, indeed, it is the bright and polar star, since undoubtedly it alone can teach him the principles of a medical practice independent of the currents, the faith and the superstition of the present. Moreover, it offers him as scientific gain, thorough knowledge of the past, the measure for a just and well-founded criticism of the doings of his own time, places in his hand the thread by which he unites past conditions and efforts with those of the present, and sets before him the mirror in which he may observe and compare the past and the present, in order to draw therefrom well-grounded conclusions for the future. An acquaint-

“ tance with the views and knowledge of epochs already submerged in
 “ the shoreless ocean of time, frees the mind from the fetters and
 “ currents of the day, with its often repressive restraint, widens the
 “ horizon for a glance into the past, and an insight into the present
 “ of human activity, deepens the view for a comprehension of the
 “ ideas which guided the earlier and the more recent physicians, and
 “ gives, on the other hand, to our daily professional labour a higher
 “ consecration, by inserting it as a most useful and necessary link in
 “ the chain of development of past and future humanity. The signifi-
 “ cance of the work of the individual, and his true value and true
 “ position with regard to all humanity, are first revealed to us clearly
 “ in and through history.” (Translation by H. E. Handerson.)

The tasks that are to be performed require, as I have said, the exercise of the best intellectual powers. What are the factors which may make you good students? I cannot do better than to quote somewhat *in extenso* from a masterly address, delivered some time ago to the medical students of the University of Minnesota, by one who is well-known to most of you—at least by name: ¹

“ In the first place acquire early the *Art of Detachment*, by which
 “ I mean the faculty of isolating yourselves from the pursuits and
 “ pleasures incident to youth. By nature man is the incarnation of
 “ idleness, which quality alone, amid the ruined remnants of Edenic
 “ characters, remains in all its primitive intensity. Occasionally we
 “ do find an individual who takes to toil as others to pleasure, but the
 “ majority of us have to wrestle hard with the original Adam, and
 “ find it no easy matter to scorn delights and live laborious days. Of
 “ special importance is this gift to those of you who reside for the
 “ first time in a large city, the many attractions of which offer a
 “ serious obstacle to its acquisition. The discipline necessary to secure
 “ this art brings in its train habits of self-control and forms a valu-
 “ able introduction to the sterner duties of life . . . Ask of any
 “ active business man or a leader in a profession the secret which
 “ enables him to accomplish much work, and he will reply in one word,
 “ *system*; or as I shall term it the *Virtue of Method*, the harness with-
 “ out which only the horses of genius travel. There are two aspects
 “ of this subject; the first relates to the orderly arrangement of your
 “ work, which is to some extent enforced by the roster of demonstra-
 “ tions and lectures, but this you would do well to supplement in
 “ private by a schedule in which each hour finds its allotted duty.
 “ Thus faithfully followed day by day system may become at last
 “ engrained in the most shiftless nature, and at the end of a semester

¹ Teacher and Student. By Wm. Osler, M.D., &c., &c.

“ a youth of moderate ability may find himself far in advance of the
“ student who works spasmodically and trusts to *cramping*. . . .
“ And thirdly add to the Virtue of Method, the *Quality of Thorough-*
“ *ness*, an element of such importance that I had thought of making
“ it the only subject of my remarks. Unfortunately, in the present
“ arrangement of the curriculum, few of you as students can hope to
“ obtain more than a measure of it, but all can learn its value now,
“ and ultimately with patience become living examples of its benefit.
“ Let me tell you briefly what it means. A knowledge of the funda-
“ mental sciences upon which our art is based—chemistry, anatomy,
“ and physiology—not a smattering, but a full and deep acquaintance,
“ not with all the facts, that is impossible, but with the great principles
“ based upon them. You should, as students, become familiar with
“ the methods by which advances in knowledge are made, and in the
“ laboratory see clearly the paths the great masters have trodden,
“ though you yourselves cannot walk therein. With a good prelimin-
“ ary training and a due apportioning of time you can reach in these
“ three essential studies a degree of accuracy which is the true prepara-
“ tion for your life duties. It means such a knowledge of diseases and
“ of the emergencies of life and of the means for their alleviation, that
“ you are safe and trustworthy guides for your fellow-men. . . .
“ The Art of Detachment, the Virtue of Method, and the Quality of
“ Thoroughness may make you students, in the true sense of the word,
“ successful practitioners, or even great investigators; but your char-
“ acters may still lack that which can alone give permanence to
“ powers—the *Grace of Humility*. . . . In these days of aggres-
“ sive self-assertion, when the stress of competition is so keen, and the
“ desire to make the most of oneself so widespread, it may seem a
“ little old-fashioned to preach the necessity of this virtue, but I insist
“ for its own-sake, and for the sake of what it brings, that a due
“ humility should take the place of honour on the list. For its own
“ sake, since with it comes not only a reverence for truth, but also a
“ proper estimation of the difficulties encountered in our search for it.
“ More perhaps than any other professional man, the doctor has a
“ curious—shall I say morbid?—sensitiveness to (what he regards)
“ personal error. In a way this is right; but it is often accompanied
“ by a *cocksureness* of opinion (to use a Johnsonian word) which, if
“ encouraged, leads to so lively a conceit that the mere suggestion of
“ mistake under any circumstances is regarded as a reflection on his
“ honour, a reflection equally resented whether of lay or of professional
“ origin. Start out with the conviction that absolute truth is hard to
“ reach in matters relating to our fellow-creatures, healthy or diseased,

“ that slips in observation are inevitable even with the best trained faculties, that errors in judgment must occur in the practice of an Art which is largely the balancing of probabilities ;—start, I say, with this attitude of mind, and mistakes will be acknowledged and regretted ; but instead of a slow process of self-deception, with ever-increasing inability to recognize truth, you will draw from your errors the very lessons which may enable you to avoid their repetition. . . . The truth that lowliness is young ambition’s ladder is hard to grasp, and when accepted, harder to maintain. It is so difficult to be still amidst bustle, to be quiet amidst noise ; yet, “ es bildet ein Talent sich in der Stille ” alone, in the calm life necessary to continuous work for a high purpose. The spirit abroad at present in this country, is not favourable to this Teutonic view, which galls the quick apprehension and dampens the enthusiasm of the young American. All the same it is true, and irksome at first though the discipline may be, there will come a time when the very fetters in which you chafed shall be a strong defence and your chains a robe of glory.”

But you will be inclined to say, “ We have had enough of the Gospel of Work, it is time we had a little of the Gospel of Play ; ” and this brings me naturally to discuss the more material side of your existence as students of medicine. At the risk of being very prosaic, let me give you a few words of advice as to the manner of life that is most conducive to the welfare of a student. If you wish to do good work you must have appropriate environment, you must live with a certain degree of comfort and take a reasonable amount of physical exercise. In the much-to-be-regretted absence of a University residence, in which the conditions of existence would be arranged on a proper hygienic basis, you must necessarily fall back on the boarding-house. There are model boarding-houses—and there are others. This city may fairly lay claim to having a “ Latin Quarter ” of its own, but while this is not far behind its Parisian analogue in sordidness, it lacks all of the picturesqueness and attractiveness of the latter. It is poor economy, for the sake of a small saving, to confine oneself in a small not over-clean and dingy room in a dark and dismal street, when relative comfort at least is to be obtained by a trifling extra expenditure.

Murger’s “ Bohemia ” is a most interesting study of one phase of student-life, but his students did no work to speak of, and their sole object seems to have been to amuse themselves in their own peculiar way, and as regards the material needs of life to confine themselves to what he aptly calls “ the strictly superfluous. ” The main desiderata in a student’s working room are cleanliness, sufficient cubic space

and plenty of fresh air. I would not insist on such apparently obvious matters, did I not know from personal experience with students—and by no means medical students alone—that such considerations of health are constantly neglected. Many a brain-racking headache owes its origin to no other cause, and “faces” which are presumably “sicklied o’er with the pale cast of thought,” may find their pallor changed to the rosy hue of health by a simple change of residence. It must not be forgotten, too, that living in crowded quarters and a vitiated atmosphere exposes—or rather predisposes—the individual to the approach of one or the other of the various infections, and especially to the modern “great plague”—tuberculosis. As regards exercise, the motto *Suum cuique* is the only one that is applicable. Suffice it to say that in some form it is essential to the maintenance of perfect health, and there are so many ways in which it may be taken that there is only the embarrassment of choice. I need only repeat here the warning against excessive athleticism, which not only defeats its own object, but often works irreparable mischief in its victim.

I cannot conclude without drawing your attention to a subject which has always interested me very much, and which many, I am sure, will agree with me in considering of prime importance—I refer to the relation of general culture to a medical education.

Bacon said somewhere that “the physician should begin with philosophy, the philosopher end with medicine;” and there is much truth in this statement, if we take the term philosophy in the largest sense—the spirit of philosophical enquiry and the philosophical method of thought. Judged by this criterion and weighed in this scale, I fear that the majority of us would be found sadly wanting. And yet this spirit and this method form the very ground work of that other method, the experimental method, which is the one on which the science of medicine is, or should be, based, and which is indispensable to further progress in that science. All experiment is futile, unless it be productive of conclusions, and conclusions are apt to be erroneous unless they are drawn by a mind trained in the methods of induction. Current and standard medical literature are full of examples of erroneous conclusions, drawn from apparently correctly observed facts and carefully performed experiments. Such a training implies a more or less extended period of study prior to the inception of purely professional work, and the only means at present known of obtaining this training are supplied by the higher institutions of learning, those that afford the opportunity of acquiring what is generally known as a liberal education. Unfortunately but

few of those who enter the field of medical study in this country come provided with the required intellectual baggage. Such is the hurry, or necessity, in the Western Hemisphere of starting on the actual bread-winning path of life, that few will, or think they can, devote the time necessary to the acquirement of a purely intellectual training. In Europe the conditions are vastly different, for a University education is considered as the necessary, and, in most countries, as the obligatory preliminary to a professional training. Take France as an illustration; in that country no individual may aspire to the degree of doctor of medicine, unless he have previously obtained the baccalaureate degree in arts or in science, and in the other states the requirements are on a similar basis. Contrast this with the condition of affairs in America, where the Johns Hopkins University is the only one requiring from the candidate for a medical education a degree of Bachelor of Arts or Bachelor of Science.

Apart from the advantage accruing to the individual from a general mental training acquired before initiation to technical studies, there is also a manifest advantage to the school itself. Many of the subjects of study which are, owing to present necessities, included in the curriculum of the medical school, are at the same time taught in the academic department—notably elementary botany, chemistry, physics, and even physiology. Were the medical student enabled to show a previous acquaintance with the rudiments at least of these branches of study, the time now employed in elementary work might be employed profitably in obtaining a knowledge of the deeper problems, and especially those having a direct bearing on human life.

The University, of which this Faculty is one of the component parts, has at all times recognized the force of the arguments advanced in favour of preliminary training as an introduction to professional studies, and has at last been able to perfect a plan which meets at least some of the requirements of the case. According to this plan a student may proceed in the course of six years to the double degree of Bachelor of Arts and Doctor of Medicine, obtaining at the same time a general intellectual culture and the special professional training. This is manifestly a step in the right direction, and while it is in reality only a compromise with the ideal, it is one for which all—teachers and students alike—should be devoutly thankful.

It is the earnest wish of the members of this faculty, and of their collaborators in the other faculties of the university, that year by year an ever greater number of the candidates for the study of medicine may learn to appreciate the value of a liberal education, and to utilize

to the fullest extent the great advantages—the price of much labour and thought—that are now offered to them

But in any case, waiving the purely professional conception of general culture, is not a liberal education a thing to be aspired to for its own sake, for the satisfaction of the inner man—that consciousness of our own acquirements and powers which follows us through life, whether we will it or no? The leisure hours of an active professional career will be made more enjoyable from a capacity to return to intellectual pursuits, the taste for which has been carefully fostered during an earlier period of life, and should we seek companionship and intercourse with our fellow-men, we shall not experience that feeling of isolation which comes from exclusive engrossment in one's own particular sphere of mental activity, however meritorious it may be.

Original Communications.

ANEURYSM OF THE ASCENDING PORTION OF THE AORTIC ARCH, LEADING TO EXTERNAL RUPTURE.

WITH A NOTE ON TRACHEAL TUGGING.

BY

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AND

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The subject of these notes will be remembered by some as having been one of the cases exhibited by one of us (J. S.) at the recent meeting of the Canada Medical Association in this City.

The history of the patient is very full, he having been in the hospital for long periods during the last two years, and very full notes of his case have been taken by Drs. Reilly, McCarthy and Nicholls. The most important points in connection with the history are as follows:

The patient, 49 years old at the time of his death, was born in Nova Scotia and gave rather a full history of circulatory disease in his family. Thus his father, who is said to have had heart disease, died at the age of 58, from the effects of overstraining himself. His father's mother had heart disease, but lived to a good old age: her father again died suddenly from heart failure. The patient entered the navy at 16, and served there until he was 25 years old. During this period he lived a life of considerable excess. He drank freely, contracted syphilis at 22, and gonorrhœa at 27. He left the navy and entered government service, and for the last twenty-four years has continued in that employment, leading a clerical and literary life.

In July, 1893, after excessive mental work he began to suffer from stabbing pains in the right and left breasts. These varied in situation, severity and course. At night they changed according to the side he lay upon, appearing in the right breast when he lay upon the right side. There were also frequent pains running from the heart to the shoulders and spreading down the arms, more especially down the right arm. There were other pains from the centre of the back under the right axilla and over the right shoulder. It will be noted that

these pains were mainly on the right side and so differed from similar pains which may accompany coronary disease.

The August and September of this year, 1893, were spent at the seaside and here the pains disappeared, but they returned upon his return to work. The patient, it may be added, was of a nervous, excitable temperament, easily depressed and at times most melancholic. Alcoholic stimulants were now ordered with the result that he became an inebriate, and in December, 1893, his condition was such that he underwent the "Gold Cure." This apparently had the desired effect, but the general condition of the patient became steadily worse, so that by June, 1894, he had to give up work. The following month, he entered one of the large Boston hospitals, where, misled apparently by the neurotic temperament of the patient, a diagnosis was made of nervous prostration. From the hospital he went the following month to Nova Scotia, and here, with rest, his condition improved, and in September he was able to return to work. Already according to the patient, a slight prominence was noticeable over the sternum; this gradually enlarged. It should be added that it was already in the spring of this year that the patient had suffered from wheezing respiration and paroxysmal coughs. In November, 1894, his condition was so bad that he entered the Royal Victoria Hospital, Montreal. Upon admission, there was a prominence over the chest from the second to the seventh rib, highest over the centre of the sternum. On the left side there were two small tumours, just at the edge of the sternum between the second and third, and the third and fourth ribs; the area was distinctly red with definite pulsation and heaving expansile impulse. The dullness present extended rather more to the right side, namely, half inch to the left and two inches to the right of the sternum. There was a systolic murmur over the tumour, tracheal tugging was present and the patient experienced some slight difficulty in swallowing.

The arteries were atheromatous and tension was higher on the right side. There were diminished breath sounds over the right lung with wheezing during deep inspiration. Upon December 1st, 1894, the small pulsating tumours on the left side had united. Upon Dec. 6th, definite erosion through the sternum and through the third rib on the left side were made out. Upon the 19th, straining at stool led to definite increase of the pulsation and redness of the tumour. The pains during this month were evanescent. Towards the end of the month, the skin had assumed a bronze tinge over the whole tumour with two reddened areas, one over the centre of the sternum, the other and smaller to the left of the same. In January the tumour

continued to grow slowly, but by March, 1895, it was noticed to be slowly lessening in diameter, measuring 4 instead of 6 inches across. The patient continued in the hospital until May, when he was discharged, showing distinct improvement in his condition since January. The diagnosis then made was Aneurysm of the Ascending Arch.

In March of this year he was in the hospital again, for a few days, for examination, and then went home, returning on the 13th August. Upon re-admission he complained of transient pains, as before, in the pectorals and shooting down the right arm, then again in the back below the shoulder blades. Arcus senilis was now well marked. There was no dyspnoea save on exertion and save that when lying upon his back the patient experienced a smothering sensation. The right radial was rather stronger than the left. The transverse diameter of the tumour had increased from 4 to 5½ inches. The skin over it was shining and glazed, there was a harsh blowing systolic murmur heard over the chest in front, faint at the apex. There was, as before, tracheal tugging, and the breath sounds on the right side were feeble. There was no difference between the pulses, at the beginning of September. The tumour steadily enlarged and upon the 8th, the skin over the apex began to give way, there being one or two small cracks from which blood oozed in small quantities. On the next day the skin over the apex looked as though the aneurysm might burst at any moment. The patient now was discharged at his desire. He was seen at home by Dr. Reilly every other day. He lived nearly four weeks after his discharge, until October 5th. Then taking his tea in bed, sitting up, the tumour suddenly burst, the blood pouring out of the upper portion of the prominence, and in a moment he was dead.

The condition of the subject when he came down out of the post-mortem room is admirably shown by the accompanying photograph. The body was that of a somewhat emaciated adult of spare frame; the conical bulge occupied the centre of the chest, having a transverse diameter of 14.3 cm. or about six inches. The skin over the cone was rather discoloured, having a brownish tinge. The truncated apex of the cone had its centre in the line joining the two nipples, and it formed a circular, fungating, blood-stained mass 5 cm. in diameter, projecting 3 cm. above the level of the surrounding skin. A probe could be passed easily into this mass towards what, taking the head as north, might be described as N.W. by W. portion of the periphery, and later examination showed that the fungating mass was devoid of skin, and was in fact, a thick layer of blood-stained fibrin, which, until the fatal moment, had acted as a shield, preventing rupture.



ANEURYSM OF THE AORTIC ARCH.

A small cicatrix was seen at the junction of the glans and skin.

The chest was opened carefully, so that the whole of the aneurysm and attached tissues might be taken out *en masse*. The ascending portion of the aorta presented large flattened fibroid, almost cartilageous plaques beginning immediately above the sinuses of Valsalva. 2.5 cm. above the valves began the sacculated aneurysm, proceeding abruptly by a sharp but smoothly rounded edge out of the aorta. The mouth of the sac was 6.5 cm. across in longitudinal diameter, by 4.5 in transverse. The fibroid thickening of the aortic intima was especially thick anteriorly along what formed the lower lip of the aneurysm.

This aneurysm was given off from the front of the ascending aorta, very slightly to the right; it was noticeable that the upper edge of the opening was 2.5 cm., or about an inch below the orifice of the innominate artery. Just beyond the upper edge of the mouth, the aorta measured 9.5 cm. in circumference, that is to say, that almost immediately beyond the sac the aorta was but little larger than normal. The sac was of great size from before, backwards; when emptied after removal, it measured 8 cm. in depth. At the sternal attachment it was 11 cm. from above downwards, beginning 3 cm. below the upper border of the sternum; in breadth it was 9 cm. The outer walls of the sac were formed of the pleuræ on either side and above, save in the middle line where there was solid mediastinal tissue; below the greatly expanded parietal pericardium formed the outer wall. The sac was filled with fairly loose clot in the main not laminated. Even in the outer portion where this formed the thickest layer, it had a comparatively recent appearance, and was so deeply stained with pigment that lamination could not be recognized. Portions of the eroded sternal edges could be felt protruding into the sac on the right side; on the left they were covered over. The main erosion or sternal orifice extended in the mid-sternal region from below the level of the third chondrocostal articulation to above the level of the 5th.

The rest of the aorta showed general slight dilatation with an atheromatous condition similar to that already described. The innominate, left carotid, and left sub-clavian arteries were not implicated in the aneurysm, nor again did they show any aneurysmal dilatation, either at their origins or along their course; their walls were however, distinctly thickened. The heart showed, first, an extensive hydropericardium, the cavity containing a perfectly clear limpid serum. There was no valve disease. The main feature of the organ was the hypertrophy and dilatation of the right ventricle and

with this a definite dilatation of the pulmonary artery, the circumference of which immediately above the valve was 9.3 cm.

The reason for this condition appeared clear when the lungs were examined; these were found retracted, and while the upper lobes were slightly emphysematous, the lower lobes were in a state of partial collapse with congestion. The small size of the lung and the obstruction of the pulmonary circulation were evidently due to the large mass of the aneurysm filling up so large a portion of the thoracic cavity. It should be added that both upper lobes presented adhesion to the wall of the aneurysmal sac and no where else. Further, it is to be noticed that there was no adhesion between the sac and either the trachea or the bronchi; nor upon examination did any of the main air tubes show distortion from pressure.

The points of more especial importance in connection with this case are :

1. The position.—In general, aneurysms of the ascending arch are situated and expand mainly to the right. In this case, although the aneurysmal sac began an inch and more above the valves, the rupture had occurred in the anterior wall, slightly it is true to the right, but very slightly, and the expansion had been in the median area of the chest so that the erosion of the sternum was central. Indeed there was an accessory but well marked erosion on the left side in the region of the third left chondrocostal articulation.

2. The second point to be noticed is that in this case there had been from time to time a marked difference in the two radial pulses, which with the other symptoms might well have led to a diagnosis of aneurysm originating much higher up the arch. It must be kept in mind that difference in the two radials is by no means diagnostic. In this case the regions of the innominate and the left subclavian were well outside the region of the aneurysm, and the difference in the two pulses here, must, as in other cases in which no aneurysm is found to exist, be ascribed in the main to the arterio-sclerotic changes, affecting the two trunks to a different extent. There is, however, another possibility in this case, namely, that the aneurysm, adherent as it was to the chest wall, did undoubtedly bring about malposition of the aorta, and this malposition may have so affected or distorted the orifice of either the innominate or the left sub-clavian as to impede the passage of blood and of the blood-wave down one or other vessel.

3. The third point of some value is brought out in connection with the sign of tracheal tugging. It is generally taught now a-days, that tracheal tugging affords a sure indication of aneurysm of the trans-

verse portion of the aorta, and as I showed recently to the Society, in a case of aneurysm of this nature, dilation of the transverse arch does undoubtedly lead easily to the production of this sign and accomplishes this by pressing upon the lower end of the trachea and the left bronchus as this passes underneath the arch. In the case before us there was no aneurysm of the transverse arch, and further there was no adhesion of the aneurysm of the ascending portion to either trachea or bronchus, and yet there was at least two years history of distinct tracheal tugging obtainable. The motion of the larynx and trachea must have, it seems to me, been brought about by the downward pressure of the large aneurysmal sac upon the lungs and smaller bronchi with each distension of the sac following upon the heart-beat. This case teaches us, therefore, to recognize that tracheal tugging may be a sign of aneurysm of the ascending aorta as well as one of aneurysm of the transverse arch.

4. As to the termination of this case.—External rupture is one of the more uncommon terminations of a thoracic aneurysm. According to Crisp's Tables this occurred six times in 136 cases of aneurysm of the ascending arch which he found recorded.

LIMITATIONS
OF THE
VISUAL FIELD OF INTRACRANIAL ORIGIN.¹

BY

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In reading this paper to you this evening, I do not offer you anything very new or original, but simply will give a *précis* of some interesting cases and the presumed or defined lesion in the brain which caused the limitation of their visual field.

I will take the liberty before going into the subject matter proper, of drawing your attention briefly to the present status of our knowledge as to the anatomy, both gross and minute, of the visual tracts and their central connections in the brain.

The fields of vision are, as you know, divided into an inner and outer, or nasal and temporal portions—the dividing line being fairly sharply defined and passing vertically through the fixation point. The nerve fibres from the retina are united in the optic nerve as far as the chiasma, where the fibres from the nasal portion of the retina decussate with the corresponding fibres from the opposite eye.

Before following them farther, it is as well to draw attention to the fact that, as a general rule, the field for a short distance on each side of the line dividing the nasal and temporal portions of it, is innervated with both sets of fibres, so that in a case of hemianopsia, the blind area limit would be clear of the fixation point.

From the chiasma the fibres from the corresponding halves of the retina pass through the optic tract to the basal ophthalmic ganglia, viz., the pulvinar of the optic thalamus, the external geniculate body and the anterior corpus quadrigeminum.

From the anterior corpus quadrigeminum fibres run to the nuclei of the ocular muscles—others decussate with fibres from the opposite corpus quadrigeminum in the roof of the aqueduct of Sylvius and thence pass to the fillet which runs on in the tegmentum of the cerebral peduncle to the optic thalamus.

The fillet contains the sensory fibres from the opposite half of the body.

From the arm of the anterior corpus quadrigeminum fibres go to the

¹ Read before the Montreal Medico-Chirurgical Society, October 30, 1896.

corona radiata and so on to the occipital cortex in the region of the cuneus where the centres for vision lie.

From the pulvinar and external geniculate bodies, fibres enter Gratiolets optic radiations (or corona radiata) in the posterior third of the internal capsule between the lenticular nucleus and optic thalamus, and thus run on to the occipital cortex.

The external geniculate bodies receive mainly the fibres from the macula of each eye, according to Knies.

In the chiasma in addition to the optic nerve fibres are two bundles of fibres lying posteriorly and superiorly called respectively Gudden's and Meynert's Commissures.

Gudden's commissure connects both posterior corpora quadrigemina and internal geniculate bodies and sends fibres directly into the corona radiata of the occipital lobe on the same side.

This commissure seems to have no connection with vision, but rather to act as an auditory chiasm.

Each convolution of the cerebrum is connected with adjacent convolutions by association fibres, as is also each lobe of the same hemisphere—and also homonymous parts of each hemisphere by commissural fibres. Hence the different portions of the brain are intimately connected.

Again the centrifugal and centripetal connection of the cortex with the rest of the brain is by the corona radiata in which the fibres are collected in the internal capsule.

Of the association fibres, one of the most important bundles is that connecting the visual cortex with Broca's frontal convolution, on account of the latter's relation to speech.

A point that Knies brings out is the presence of centripetal and centrifugal fibres in the optic nerve, the former being much finer than the latter and originating in the ganglion layer of the retina, to terminate in a fine plexus in the optic basal ganglia. The centrifugal originate in the ganglion cells of the three basal optic nuclei, are coarser and come to an end in the internal granular layer of the retina.

As to the connection of the optic tracts with the pupillary nucleus, it is a question whether the fibres from the tracts pass through the anterior corpora quadrigemina or external geniculate body and pulvinar or whether they pass from the tract close to these bodies directly to the ganglion habenulæ.

A word as to the location of the cortical visual centres. The macula portion of the field corresponds to the cuneus and first occipital convolution. Of the rest, of the occipital cortex, the anterior portion

corresponds to the lower portion of the field of vision, the posterior to the upper portion, and the lateral to the outer portion.

The first case I will mention is, J. W. McK., aged 29. I saw him in October, 1895. Nine months previously, he was troubled with severe headaches and vomiting. Three months later he had an attack of Jacksonian epilepsy for the first time, which after this frequently recurred.

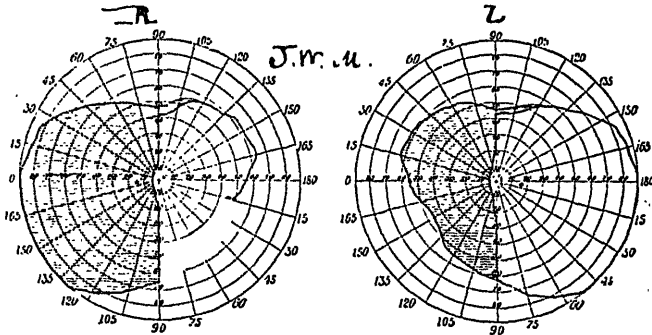
In these attacks the left arm was drawn up over the head, the left leg was drawn up flexed, the head was drawn back and to the left and the eyes rolled up and to the left.

Vision had been failing latterly. His condition on October 7th, when I first saw him was as follows:—

Complete left hemiplegia.

Vision L. E., $\frac{5}{36}$.

“ R. E., $\frac{5}{9}$.



Both pupils active to light and accommodation, also consensually, also on stimulating the blind retinal area.

There was left hemianopsia, the dividing line clearing the fixation point. The right sides of both fields were slightly contracted, but the colour vision field, although contracted, was normal as to perception of colours.

In both fundi one saw oedematous choked discs, the surrounding retina being only slightly swollen, and there being no hæmorrhages. The visible disease was most advanced in the left papilla. Mentition and speech were slow. The patient died six weeks later, a post-mortem was performed by the local medical man in the country, and the report was not very explicit, being merely that he found a tumour in the motor area of the right cortex and neighbourhood.

The case presents a most interesting clinical picture.

The irritative symptoms of the Jacksonian epilepsy clearly would point to the seat of the lesion as being in the right motor area, yet

this could not be absolutely affirmed, since the distant symptoms of a cerebral tumour are so varied.

The later development, however, of the marked paralytic symptoms on the opposite half the body pretty well removed any possible doubt. The further appearance of left hemianopsia with retained pupillary reflex would point to a lesion posterior to the basal optic nuclei, either in Gratiolet's radiations or the cerebral occipital cortex.

I may here mention that this pupillary reaction from stimulation of the blind area of the retina in these cases I never feel absolutely sure of, if the reflex is present—as the test is delicate—more certainty can be felt if it is absent; the latter pointing to a lesion at or in front of the basal optic nuclei.

The growth must also thus implicate the visual cortex on the right side directly either in the cortical centre or the radiations, likely the former.

It would hardly be in the radiations without causing other paralyses of ordinary sensation—hemianæsthesia.

The contracted fields on the right side must be ascribed to the choked disc condition, with the accompanying interference of conduction in the nerve—although the diminution in vision is far from being constantly present in choked disc.

The appearance of the discs was rather that of œdematous infiltration than an inflammatory process.

Knies explains this condition as due to increased intracranial pressure.

He says that normally there is an outflow from the eye towards the brain within both the nerve and its sheaths. Increased intracranial pressure would abolish this; stasis and œdema would develop.

This œdema becomes evident in the optic nerve outside the cranial cavity, where it is not enclosed in a tightly fitting sheath, i.e., at the disc, and also within the vaginal spaces where the external sheath is thinnest and yielding; immediately behind the eye.

Persistence and increase of this pressure on the nerve can in time obstruct vision. Now as to the movements of the eyes up and to the left, this symptom occurring early, during the Jacksonian epilepsy, could be due to the irritation of the visual spheres, taking into account the later appearance of the left hemianopsia. Although one need not look so far afield as this, for it is well-known that conjugate deviation towards the opposite side can be called forth on irritation of almost all parts of the cerebral cortex.

Yet it is most surely done by stimulating the visual cerebral cortex.

Munk showed that irritation of the anterior zone caused the eyes to

be directed downwards and of the posterior zone to be directed upwards as well as to the opposite side.

Thus the clinical picture pointed very clearly to what we might expect to find at the post-mortem examination.

The next case I will describe to you also came to section so that the diagnosis could be verified; it has already been reported by Dr. James Stewart.

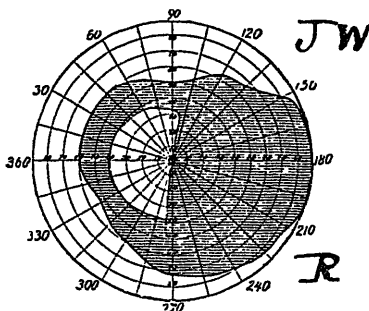
It is very interesting in this connection in that the lesion was situated in an entirely different portion of the visual tract from the last.

J. W., aged 42, came to me in February, 1888, with total blindness of the left eye and complete right hemianopsia of the right eye. The left eye had been failing since two years, and the right for eighteen months, but the latter had remained apparently stationary since eight months.

He had pains in joints and hands; there is some giddiness with a tendency to fall forward: no history of syphilis.

Has been a rather heavy drinker. Vision L. E., no perception of light, pupil semidilated immobile, but reacts on stimulating the R. E. with light.

R. E., complete blindness to outer side of field, the inner side was amblyopic; vision being reduced to counting fingers at 12 ft. In



reading type can pick out a letter of the largest size (No. 16) here and there. In this area the perception of green was very defective, also after looking at green for some time there was an after image in pink.

Examination of the fundus revealed, in the L. E. white atrophy of the disc, with vessels somewhat contracted.

R. E. disc not so pale as in left eye.

His reflexes were slightly exaggerated, but there were no motor disturbances.

Frequent flushings and perspiration of face and back of neck occurred.

The further course of this case was very slow, six years elapsing before his death.

His sight entirely failed about eighteen months after I saw him. He became fat and flabby, always had a good appetite, but was greatly bothered with continuous sleepiness.

Frequent flashings of light (Photopsiæ) appeared, and later on he developed hallucinations of "beasties" crawling over him, which he imagined he could point out. The post-mortem examination revealed a tumour as large as a hen's egg, springing from the meninges and pressing on the front of the chiasma.

The microscopic investigation showed the growth to be of the nature of an endothelioma.

The diagnosis made at the first time Dr. Stewart and I saw him was that of cerebral tumour, implicating the chiasma from the front.

The visual disturbance was the only factor to base the diagnosis on, and if one could only have seen the patient earlier the limitation of the field would have been more typical.

The absence of the pupillary reflex showed that the lesion must be somewhere between the left eye and the basal optic nuclei, also the presence of visible optic atrophy was, if necessary, a proof against the lesion being further back than the basal nuclei, as in lesions of the optic radiations or cortex, white essential atrophy is exceedingly rarely, if ever visible at the optic disc.

Again and mainly, it would be hardly possible to have a lesion causing bitemporal hemianopsia anywhere else than in the anterior part of the chiasma, unless we could imagine a lesion of each central nasal area. The portions of the optic nerve supplying the inner halves of the retina decussate in the anterior part of the chiasma, a further extension of the growth to the left would easily obliterate the function of the remaining portion of the left optic nerve causing complete blindness of that eye and subsequent atrophy.

When I first saw the patient the obtunding of the nasal half of the right field, together with the defective perception of green, pointed to marked interference with the conduction of the remaining active portion of this nerve; there was a concentric and fairly equal contraction of the field for white and colours pointing to a likely slow growth; if on the other hand the field for colours had been much more markedly contracted for colours than for white, the prognosis would be a rapid progress of the disease.

Another striking point was the absence of any optic neuritis or choked disc.

It is likely the very slow growth of the tumour would account for the absence of the choked disc, time being sufficient to allow of the formation of lateral drainage or gradual distension of the sheath.

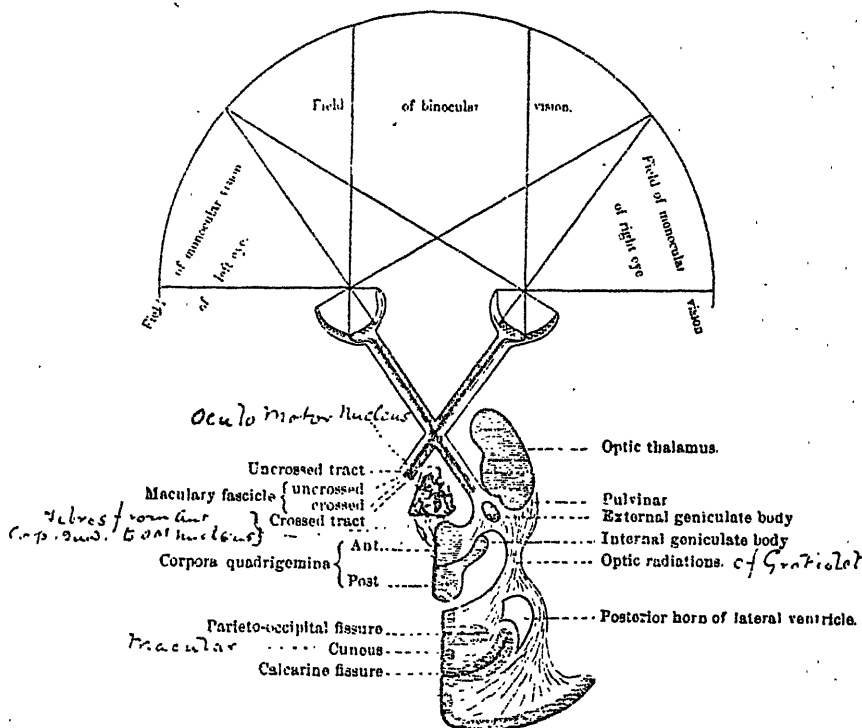
The hallucinations point to the cortex being still functional (it being the seat of conscious vision) and to its irritation.

Another interesting case in which the visual disturbance was due, not directly to the intracranial lesion, but to the optic neuritis set up by it, is the following:

G. J., aged 12, was referred to me by Dr. Springle for examination of the ocular condition.

He had for some weeks been suffering from severe headaches, occasional vomiting and giddiness.

FIG 5



His vision was $\frac{5}{18}$ with each eye, but no lens could further improve it. The pupils reacted to light but were sluggish, they were even. The field was slightly contracted peripherally, and the perception of green uncertain.

The fundus showed marked inflammatory choked disc, with great swelling (3 mm.) extending well into the surrounding retina and numerous small hæmorrhages. The condition was if anything more marked in the right.

The boy complained of the headaches being general, and continuous,

with occasional exacerbations. He was markedly giddy, with a tendency to fall forward, a very unsteady reeling gait, knee reflexes exaggerated, but no other motor or sensory disturbance.

This case got rapidly worse, complete blindness ensued within four weeks, convulsions, general in character, set in which became almost continuous, and finally coma and death.

I am able to show you the brain. At the post-mortem examination we found almost the entire vermiform process of the cerebellum occupied by a tumour which had undergone softening at its centre; it was strictly limited to the vermiform process and the immediately adjoining cerebellum.

The main localizing symptom here was the vertigo. The cerebellar coordination and integration of the body movements being interfered with; the direct cerebellar tracts which convey to the cerebellum, sensory impressions indicating the posture of the body, being partly destroyed. The inflammatory nature of the choked disc differed entirely from the oedematous form I mentioned as recurring in my first case of cerebral tumour.

According to Leber and others, tumours especially of the cerebellum and base, if rapidly growing, excrete irritating and inflammatory substances. These are diffused through the cerebro spinal fluid and enter the sheath of the optic nerve, where from increased intracranial pressure stasis has already existed and here where oedema has developed, the substances set up inflammatory action.

The narrowing of the field, together with the faulty perception of green is typical of interference with conduction in the nerve.

The diagnostic value of the double optic neuritis in cerebral tumours is well known.

The next case is one of hemianopsia and hemiplegia due, I think, to embolism or thrombosis.

T. H., aged 68, a diabetic, came to me last autumn for the examination of his eyes for glasses. He was suffering from right hemiplegia and stated that some months previously he had a paralytic stroke. After this he was for a short time aphasic but this symptom gradually disappeared.

On examining his eyes I found, in addition to some opacities of the lens, well marked right homonymous hemianopsia, and this was the main cause of his complaint, on account of the difficulty in reading, the inability to see words ahead on the line being very troublesome.

The pupils were even and active, on stimulating both the blind and normal portions of the field.

Seven months later the general condition was the same.

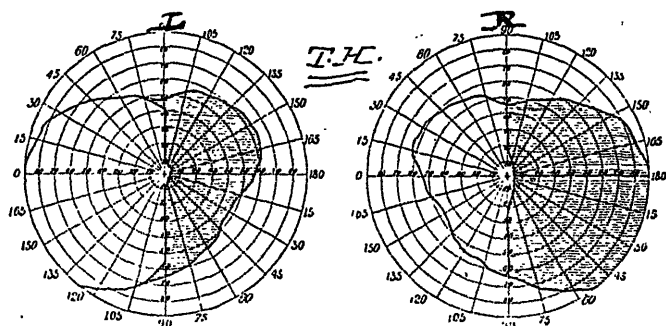
There was no hemianesthesia at any time.

There is some difficulty in locating this lesion as the areas affected are so diverse.

In the ocular symptoms the presence of the pupillary reaction point to the lesion being somewhere behind the basal optic nuclei on the left side, either in Gratiolet's optic radiations in the internal capsule or in the cortex.

It is unlikely to have been in the former as there was no anæsthesia, and the fibres of general sensation run in the same portion of the internal capsule—while still further in front are the motor fibres. Now these latter and the special sense optic fibres could hardly be affected in this region, while the fibres of ordinary sensation escaped. Hence the lesion must be cortical, and could hardly be otherwise than thrombotic or embolic in the middle cerebral artery.

The aphasia was a transitory, remote symptom.



According to Seguin, a lesion causing typical hemiplegia, aphasia if the right side is paralysed, little or no anæsthesia, and lateral hemianopsia is probably due to disease in the area supplied by the middle cerebral artery.

An exceedingly interesting and rather peculiar case of colour blindness in homonymous halves of the field of vision came under my observation some years since.

J. K., aged 35, suffering from incipient general paralysis of the insane was referred to me by Dr. James Stewart.

The vision was $\frac{5}{6}$, or approximately normal, the pupils even and active and the fields free for white but total colour blindness existed to the left side of both fields of vision.

He had left facial paresis. Beyond this and the mental condition there was nothing to note.

With the reaction of the pupils present, the condition was plainly referable to the right occipital cortex.

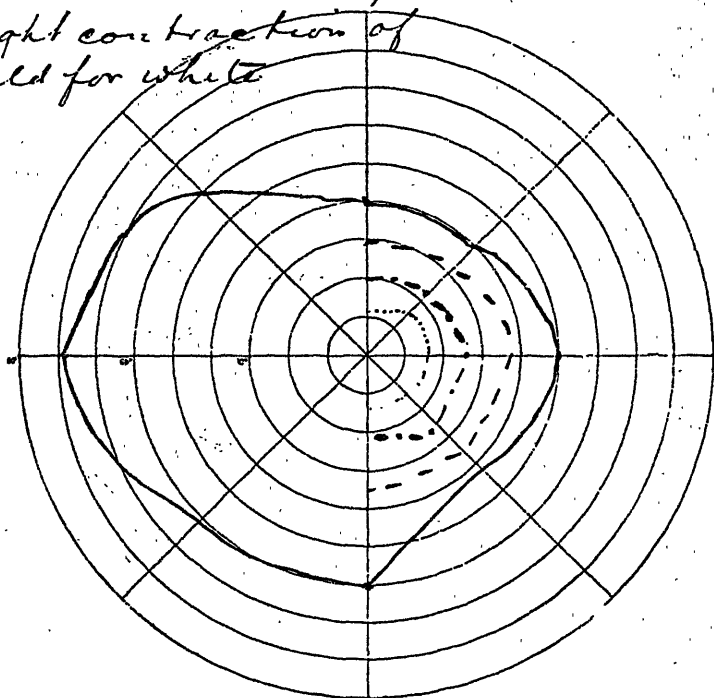
An interesting point was the retention of such good central vision.

Wilbrand brought forward the theory some years since that the elements for the perception of light, space and colour in the cortex were superimposed above one another in the above order from within outward, hence the colour sense could be interfered with, without the light or space sense being affected, and again the light elements could not be interfered with, without the space and colour elements also suffering. Accordingly hemiachromatopsia would be due to super-

J K
1889

L. E

Left Hemiachromatopsia
slight contraction of
field for white



ficial disturbances of the cortex. This I mentioned some years ago in a paper I read in Ottawa.

As Knies, however, points out, anatomical proof of this is wanting, and he brings forward a far more sensible assumption, that the function in the cortex is merely disturbed or rendered difficult, interference with conduction in the neuropilemma or the ganglion cells exhibit diminished function and capacity for action, which may be temporary or remain stationary.

Likely here we get a manifestation in this area of the general pathological state whatever it may be, which is associated with the general paralysis.

I have now brought before you a series of cases of visual disturbance due to brain lesions, each of them fairly characteristic, and happily in three cases, the post mortem reports were secured to complete them.

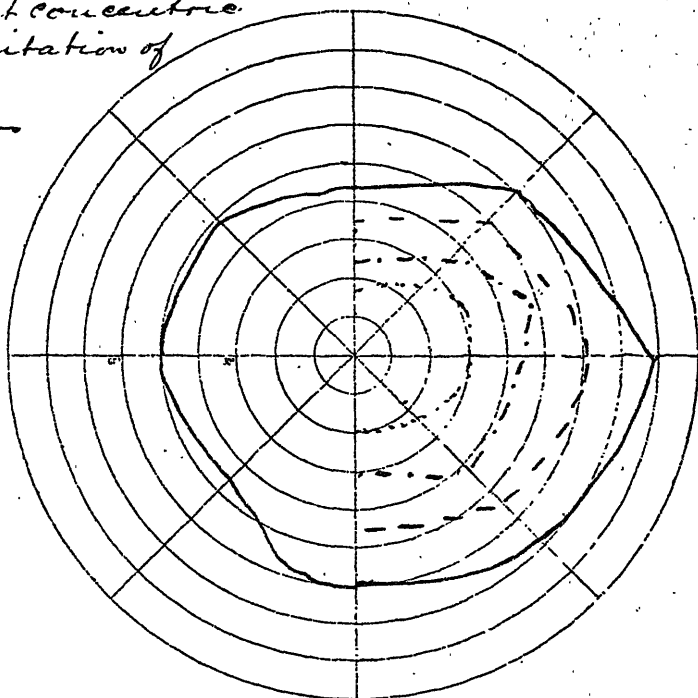
The first of left hemiplegia and hemianopsia, with a tumour in the right motor area and neighbourhood, producing œdematous choked disc.

J. K.

1889

R. E.

Left
Hemichromatopsia
Slight concentric
limitation of
field



The second of tumour of very slow growth in the chiasma area with typical field limitations and setting up pure atrophy of the optic nerves.

The third case was the cerebellar tumour, setting up optic neuritis and consequent blindness.

The fourth was a case of hemianopsia and hemiplegia, due likely to thrombosis or embolism.

The fifth was the interesting case of hemiachromatopsia.

NOTE ON EXCISION OF THE KNEE JOINT.¹

BY

SIR JAMES GRANT M.D.

The knee-joint, the most complicated anatomically in the human system, has been subjected to excision, chiefly for three conditions.

- 1st. Chronic disease of the articulation.
- 2nd. Anchylosis, whether fibrous or bony.
- 3rd. Compound fracture or dislocation.

The first excision of the "knee-joint" successfully, was performed by Filkin of Norwich, in 1762, and again by Park, in 1781, 40 years ago, it has been performed in all less than 25 times, owing chiefly to its receiving but little favour. This operation has been very considerably revived by Textor of Germany, and the late Sir Wm. Ferguson, of London. The first excision of this joint in the United States, 1856, was performed by Dr. Kinloch of Charleston; and in March, 1865, in the Protestant Hospital, by myself, this being one of the first knee excisions in Canada.² The term excision has quite a different signification now, from what it had thirty years ago. Then it meant somewhat free removal of much of the structures essential to the functions of the articulation. At present it means, in many cases, very partial interference with the structures essential to the joint, while it aims in every case, at the complete removal of the diseased tissues. To dig out sequestra from the surfaces of bones, and scrape the latter, and thus not shorten the limb, is the order of the day. Quite a change from former times, when the ends of the bones would be sawn off, in order to coapt parts and form a mechanical joint without much consideration as to future usefulness. Such, however, was more the result of a want of knowledge of our present advanced pathology than otherwise. The term "arthrectomy" was for a time spoken of as meaning partial excision of the joint, where the diseased synovial membrane is chiefly or solely removed and "excision" to removal of the ends of the bones completely. These terms arthrectomy and excision so overlap each other, and fail to define the exact meaning, that the terms partial and complete excision are now generally adopted, and chiefly owing to the fact that it is exceedingly rare to meet with a case of knee-joint disease in which the whole of the synovial membrane requires extirpation and yet none of the bone,

¹ Read before the Ottawa Medical Society, Feb., 1896.

² Reported in Medical Times and Gazette, London, Eng., March 18, 1865.

and vice versa, it is just as rare to meet with a case requiring the free removal of the ends of the bones, and not calling for the removal of the synovial structures. To-day complete excision of the knee-joint is a novelty, that is, opening the joint, sawing off the ends, and coapting the parts as in the days of Professor Geo. Fenwick, of McGill, whose name is handed down as one of the most celebrated surgeons Canada has produced. Why these changes or modifications as to treatment of such cases? First, the more accurate recognition of the vast importance of early and vigorous treatment of tuberculous disease, has arrested much, which formerly progressed to complete destruction of the ends of both the tibia and femur; and on the other hand, when operation is decided upon, it is at a stage when disease of the bones can be removed without complete excision of the ends, although the bone tissue is conserved as much as possible, the removal of the synovial tissue is now particularly free. In fact, Treves states it is not an uncommon procedure to dissect out the entire synovial membrane, whether visibly affected or not. In general terms, in a case of tuberculous joint, the first principle is to remove all tissues in which we believe the bacilli are deposited and to spare all structures, except the synovial membrane, not charged with the tubercle bacillus. It must be admitted that this is after all, a complex problem, not only in theory, but also in practice. In adults exsection is truly the shortest and safest way of eliminating the tedious morbid process and substituting ankylosis for a comparatively useless joint. To adult cases, orthopædic treatment is rarely applicable, while in children, mechanical and general treatment frequently are attended with the most practical results. In the child, the growth of the thigh and tibia, depends so much on the epiphyses adjoining the knee, that exsection is liable to be followed by very considerable shortening, and consequently is to be avoided as much as possible. The antiseptic treatment in such operations, as defined by Gerster, requires no comment. To be truly progressive is to be truly antiseptic in treatment, the results of which certainly mark the present as a progressive era in surgery. In the older operations on the knee-joint, in which an absolutely stiff knee was the object in view, it was not looked upon as important, whether the ligamentum patellæ was divided or not, in such a case the action of the extensor muscles not being considered. More recent operations, however, tend to the preservation intact of the ligamentum patellæ, in order to preserve, as far as possible, some of the movements. Treves recommends that if the patellar ligament has been divided, it should be stitched together again with silk, which remains buried. He considers it better not to include the capsule of

the joint in the stitches which unite the skin wound, as the skin is liable to be dragged in and the edges displaced, thus interfering with primary union. It is also important that the edges of the capsule and the fibrous expansion of the muscle should not be united, as any effusion into the joint cavity after the operation would thus not be pent up, but escape into the areolar tissue around and become more rapidly absorbed, and should even any pus be formed, it would be more easily evacuated. Sayre, in his recent work on "Joint Diseases," states as his opinion that exsection of the knee-joint is attended with considerable danger, and in many instances you may justly hesitate before resorting to the operation. Mr. Bryant, in a lecture at Guy's Hospital, published in the *Lancet*, "On the least sacrifice of parts as a principle in operative surgery," states: "I trust that this series of cases is enough to demonstrate with sufficient clearness, the value of the practice I am now inculcating, and to show that in a large number of cases of disease of the joints, a cure may be secured by a simple incision into the affected joint and the removal of the necrosed bone. The series includes examples of disease of the shoulder and elbow, hip, knee and ankle and great toe joints, and I do not think I should be far wrong if I were to express my belief that in many cases, if not in all, many surgeons, more particularly those who are advocates for excision, would have excised the joints, and some few, would have amputated. In the treatment I am now advocating, the surgical proceedings are simple and are attended with a minimum of danger. The success of the practice I have recorded was great." The opinion of Mr. Bryant is one founded on large practical experience and is certainly worthy of the fullest consideration, when such trying cases present for surgical interference and treatment.

RETROSPECT OF CURRENT LITERATURE.

Medicine.

The Operative Treatment of Focal Epilepsy.

SACHS AND GERSTER. "The surgical treatment of focal epilepsy,"—
Am. J. Med. Science, October, 1896.

BERGMANN. *Berl. Klin. Woch.*, April 22, 1895.

EULENBERG. *Ber. Klin. Woch.*, April 15, 1895.

JOLLY. *Charit Annalen*, XX.

The operative treatment of epilepsy is now very properly restricted to cases in which there is evidence of local disease. In idiopathic epilepsy operations, such as trephining, have deservedly fallen into disuse. Even in cases of focal epilepsy, with the exception of favourable cases of abscess or tumours, the results have hitherto not been very encouraging. Doubtless a more careful selection of cases may give better results in the future. It must be remembered that only a minority of cases of Jacksonian epilepsy hold out a reasonable prospect of cure or improvement.

Sachs and Gerster's paper deals with 15 cases of focal epilepsy due to cerebral disease or injury treated by operation. Of these three were cured, five improved, three died and four were not benefited. The indications for operation are clear in cases of local convulsions developing after injuries. A painful scar is not infrequently present over the site of injury, or local tenderness and headache as in Sachs and Gerster's first case and may give an important clue to the site and traumatic origin of the affection.

The lesions producing focal epilepsy after trauma are various. The most obvious are depressed fractures; local thickening and adhesion of the dura and cysts also occur. In such cases an exploratory operation may be undertaken and the conditions dealt with as they are found.

Another class of cases, however, are of importance in which, with local convulsions, no macroscopic change is present in the dura or cortex. Horsley, McEwan and others have defined the affected area by cortical stimulation with the Faradic current and excised the epileptogenic area. In a few instances the excised portion has been shown to present signs of chronic meningo-encephalitis, due to a spicule of bone or to hæmorrhage at the time of injury. There is thus a reasonable anatomical basis for this procedure. Unfortunately, however, there is a tendency to wide-spread inflammatory changes, especially in chronic cases, an event which greatly lessens the chances of improvement after excision in old standing cases. Another drawback is the development of a scar in place of the excised area which, in the course of a year or two, may induce convulsive attacks. It has been urged that paralysis may result from excision of the motor cortex, but as is well known the paralysis is only temporary: Sachs and Gerster record a remarkable instance in which both arm centres were removed and yet the resulting paresis disappeared in a few days.

Among the commonest causes of focal epilepsy are old attacks of cerebral paralysis in children. The lesion here is frequently a cyst, often of large size and communicating with the ventricle. In such cases most physicians are adverse to operation. An attempt to drain a large cyst is only too apt to prove fatal, as in one of Sachs and Gerster's cases, and in two cases witnessed by the writer. Should such a condition be found it is best left alone. Sachs and Gerster are, however, more hopeful of success in these distressing cases than most previous writers. One of their cases (8) with hemiplegia, athetosis and weekly fits, was relieved of the fits for four years, but as he had then relapsed and was feeble minded, it is questionable whether much benefit was conferred by the operation.

Jolly's three cases do not seem to have derived much benefit from operation. They are, however, of interest in illustrating the deleterious effects of alcohol in focal epilepsy—a point which hitherto seems to have escaped any general recognition.

In drawing conclusions of the benefits derived in any special case of focal epilepsy treated by operation, an interval of at least one, or better, two or three years should elapse. The slow development of scar tissue which takes place within this time explains relapse after temporary improvement. On the other hand, cases may ultimately improve and can be completely cured in which convulsions do not immediately cease.

A very important point brought out by Sachs and Gerster is the

necessity of early operation after the development of local convulsions. If allowed to continue, it is obvious that wide-spread local inflammation may prevent any benefit from being derived from operation. It is noteworthy that the three cases in which these authors report a cure the period intervening between the onset of the convulsive seizures and operation was not more than six months, and in four of five cases of improvement the interval varied from six months to two and a half years. On the other hand the cases in which no improvement took place had lasted from five to nineteen years.

Certain German authors refer the improvement occurring in many cases of focal epilepsy treated by operation to the psychological effect.

Jolly, for instance, records a case in which a youth had local convulsions with a tender scar on the scalp which had followed an injury six years previously. Cutting down on and freeing the scar from its surroundings was followed by complete relief, only one fit occurring subsequently.

F. G. Finley.

Ophthalmology.

Toxæmia of Exophthalmic Goitre.

LEMKE. "Toxemia of exophthalmic goitre."—*Münchener Med. Woch.*, XV., April 14th, 1896.

MARTINS "Nature of exophthalmic goitre."—*Berliner Klinik*, May, 1896.

M. ALLEN STARR. "Nature and treatment of exophthalmic goitre, with special reference to the thyroid theory of the disease and to the treatment by thyroidectomy."—*Medical News*, April 18th, 1896.

CLAUDE WILSON. "Saline baths in Graves' disease."—*Practitioner*, September, 1895.

If proof were needed of how much we are in the dark as regards this disease, the publication of many articles, diverse in their views, ought to suffice. Pathological theories are frequently advanced only to be confuted, and we would seem as yet to be no nearer the absolute truth than at the outstart. However, there are now appearing some slight clues which may, in the not distant future, lead us to the facts of the case as regards, at any rate, its pathological cause. A cursory glance at and *résumé* of the above articles will be of use in giving us at least an idea of the knowledge of exophthalmic goitre as at present held by the medical world.

Lemke absolutely asserts that exophthalmic goitre can not be a nerve disease, nor that the toxin of the struma is a nerve poison. He holds that the most constant symptom is in the muscular system, especially the heart and cross striped muscles. The poison of the struma acts specifically on the muscle, stimulating it to abnormal action, making it slow, difficult and unsafe. This causes tachycardia and muscular tremour, and from this also arises dilatation of the heart and atrophy in the striped muscle, more especially of the eye. On account of the lengthening and weakening of the ocular muscles, and through the force of the blood current, the eye is forced forwards, exophthalmus resulting. Græfe's lid symptom is then due to slow action of the orbicularis palpebrarum. The inactivity of the pupils is due to the same condition in the sphincter and dilator of the pupils. The head symptoms arise from the affection of the muscle coats of

the intracranial vessels, they, as a result, becoming overfilled with blood, but are not, as other authors have held, in an active hyperæmic state. The same vascular condition would account for the lung symptoms, the kidney, skin and other symptoms. He has cured a number of cases by partial extirpation of the gland.

Martins starts off by saying that the conflicting theories of the disease are due more to the cardinal symptoms being regarded as the disease proper, whereas it is really a disease of every system and organ in the body to a varying degree. There is no pathological support as to the seat of the lesion being in the medulla and likewise the sympathetic theory, which fails to explain the tremour and the disordered impulses which do not pass down the sympathetic from the cortex to the muscles. The peripheral nerves are not originators, but conductors of impulses. Experimental evidence based upon section or stimulation of their fibres is of no value as an indication of the condition of the nerve cells, which is the main factor in disease. Occasionally disease of the sympathetic may be set up by one of the sequelæ of exophthalmic goitre; but the chain and ganglia are invariably found to be healthy. Martins then says that the symptoms depend essentially on functional disturbances of the central nervous system. Goffroy, Greenfield and others have shown that the enlargement of the thyroid is due not only to vascular dilatation, resulting from disordered innervation, but also to hyperplasia in the crypts. This disease differs from organic nervous disease on the one hand and from functional (such as hysteria, &c.) on the other. It resembles in its symptoms chronic intoxications, such as alcoholism, &c., which is further borne out by the fact that it is often induced by a psychical disturbance, such as fright. In a system already soaked with alcohol, the symptoms of acute alcoholism develop frequently from slight external cause, and thus in the same way in exophthalmic goitre, the system already in a state of chronic intoxication from the disturbed action of the thyroid gland, a slight similar external cause may suffice to set up the disease. Similar also is the onset of uremia in granular contracting kidney. The conclusion which Martins arrives at is that exophthalmic goitre is a chronic poisoning of the whole nervous system, but the question yet to be decided is as to whether the thyroid gland produces the poison or inhibits its destruction.

Dr. Allen Starr's is a most clear and elaborate dissertation on this subject and well worth the studying. His theory is that exophthalmic goitre is due to hyperactivity of the thyroid (an old theory); in which theory he finds himself forced to believe, as a result of his observations on exophthalmic goitre and on myxœdema.

The results of administering thyroid extract in myxœdema, cretinism and obesity must have impressed one with the fact that the symptoms of exophthalmic goitre are due to an excess of thyroid secretion in the blood. This theory will seem more probable if the symptoms of these two diseases are contrasted, and if one observes the result of the administration of the thyroid extract in myxœdema.

Dr. Starr's contrast of the symptoms is worth repeating in detail. In exophthalmic goitre, there are, swelling of the thyroid gland, protrusion of the eye-balls and rapid heart action, burning skin and perspiration, intense nervous excitement, irregular and rapid respiration and sudden exhaustion. In myxœdema there are primary atrophy of the thyroid gland, or a destruction by a cystic growth, marked tendency to ptosis, independently of the thickening of the lid, whereas in exophthalmic goitre it is rather retracted. The pulse is slow and of high tension in myxœdema, also the skin is thickened and dry, growth of hair impaired and nails discoloured; there are sensations of cold, and mentally the patient is dull and apathetic, whereas the very opposite conditions hold in exophthalmic goitre. Again the over-administration of thyroid extract in myxœdema is evidenced by exophthalmos appearing.

Starr holds with Greenfield and others that pathologically this disease is a true hypertrophy of the glandular elements, with increase of its secretion and possibly some change in the character of the secretion. Hence the rationale of giving belladonna to check the secretion. As to treatment, it seems to be mainly empirical, as recoveries have been recorded after all manners of treatment.

Dr. Starr advises after rest-cure and medicinal treatment have failed in severe and intractable cases, that extirpation of the gland is justifiable.

Dr. Claude Wilson reports a satisfactory result of treatment in a case of exophthalmic goitre. There had been prolonged and unsuccessful drug treatment. Dr. Wilson then essayed the treatment with saline baths, the baths being prepared so as to imitate the natural waters of Nauheim. His method was :

1. Begin with weak baths (1 lb. common salt and 1½ drams of calcium chloride to 10 gallons of water), temperature slightly below that of the blood.

2. Gradually increase strength of bath up to 3 per cent. Na. Cl. and 3 per mille Ca. Cl.,—lengthen duration and lower temperature to 85°F.

3. Add free carbonic acid to the stronger baths by using bicarbonate of soda and hydrochloric acid.

4. The patient to lie down for an hour after each bath.

5. Never give baths for more than four consecutive days. The carbonic acid is not necessary in all cases, nor is it equally well borne by all patients.

Gonorrhoeal Conjunctivitis.

L. J. LAUTENBACH. "Gonorrhoeal conjunctivitis; its treatment."—*Proceedings of the Ophthalmological Section, American Medical Association, May, 1896.*

After the usual directions as to cleanliness and asepsis, Dr. Lautenback details his method of treatment as follows :

Wipe off the eyelids with a piece of absorbent cotton soaked in 3 per cent hydrogen peroxide. Instil twenty to thirty drops of the same solution between lids, or use it as a spray, continuing until there is little or no bubbling. Then evert the upper lid and instil into the opened up palpebral folds more peroxide and then wipe the parts with absorbent cotton dipped in the same solution. Repeat the same procedure on the lower lid, being sure to thoroughly cleanse the cul-de-sac. Replace the lids and gently rub the ball through all parts of the lids so as to thoroughly cause decomposition of the discharge. The above manipulations are now repeated with a saturated solution of boracic acid. The nurse to cleanse the eye with the boracic acid solution every hour or half hour. The physician after this applies once or twice a day a solution of nitrate of silver, 10 to 60 grs. to the ounce (the severer the inflammation the stronger the solution) with a cotton wound probe over the palpebral conjunctiva into the cul-de-sac, and then to the ocular conjunctiva, carefully avoiding the cornea. Instil 4 or 5 drops of sweet oil after it. The nurse instils a few drops of a one or two per cent. solution of nitrate of silver two or four times daily. Ice cold compresses and atropin, when indicated, complete the treatment.

The Value of Eucain in Ophthalmology.

RICHARD VOLLERT. "Über den werth des Eucain in der Augeneheilkunde,"—*Münch. Med. Wochenschrift.* 1896. No. 22.

Vinci has already lauded the action of this drug as an ocular anæsthetic very highly; but as in nearly all the new drugs which are brought out with a great flourish of trumpets, later investigations always discover some drawbacks, and eucain is no exception to the rule. Its anæsthetic action is undoubted, but the first drawback is the greater irritation it causes when compared with cocain. A more serious drawback, however, is, according to Vollert, the extensive

desquamation of corneal epithelium it occasions. Cocain does the same, but to a much less degree. This, Vollert considers, is sufficient to prevent eucain ever entirely displacing cocain as an anæsthetic. The great point in favour of eucain is its freedom from toxic action when absorbed into the system. It is also much cheaper than cocain. It would seem, however, likely to supplant cocain in cases where large quantities are injected subcutaneously, &c., on account of its non-toxic action. Five per cent. is the general strength of solution used. It does not undergo decomposition on boiling, is freely soluble in water, but only with difficulty in a sublimate solution.

Experimental Studies in Sympathetic Ophthalmia.

BACH. "Bericht der 24 Versammlung der Ophthalmol. Gesellschaft."

Bach has again attempted to prove or disprove the migration theory of Deutschmanns as to the origin of this disease, but has arrived at entirely negative results.

In his investigations Bach failed in his ophthalmological or bacteriological work to find any support for Deutschmann's theory. He also failed to find any support for the bacterial theory in eyes enucleated during or after sympathetic inflammation; although attenuated by inflammatory changes.

The resumé of his work is: A severe state of irritation in one eye can, after a certain time, give rise to microscopically observable changes in the second eye.

The irritation extends from the exciting eye centripetally along the ciliary nerves to the ciliary ganglion, from these by the sympathetic root to the carotid plexus, and from this through the arterial circle of Willis to the carotid plexus of the opposite side, and hence in turn again through the ciliary ganglion to the second eye.

J. W. Stirling.

Pathology.

Concerning the Placenta and Ectopic Gestation.

YOUNG, ALFRED H. "The development and structure of the placenta"
—*Manchester Medical Chronicle*, vol. IV., p. 86, 1895.

WEBSTER, J. CLARENCE. "Ectopic pregnancy, its etiology, classification, embryology, diagnosis and treatment." with 80 illustrations
Edinburg and London. Young J. Pentland, 1895.

There is no organ in the human body that has given a more barren return for the amount of patient investigation that has been devoted to it than has the placenta, none of which the pathology is so incomplete. What we know surely concerning it has been gathered together most laboriously, and the amount of chaff that has had to be sifted to gain the few grains of wheat, has been prodigious. But as in other branches of medical science so in embryological studies of the human foetus, the last decade has seen notable advances, and Dr. Young's article and Dr. Clarence Webster's book ¹ show that we have arrived at a position where at last we have a solid basis under our feet, although that basis might with advantage be broader.

Briefly the present standpoint with regard to the structure and development of the placenta is as follows:

Just as the fertilised ovum of plants reacts upon the surrounding cells and causes their destruction, so the mammalian ovum must not be regarded as impassive, or as dependent upon changes in its surroundings rather than upon its own activity for the series of events constituting the first uterine changes. So low down as the kangaroo with its imperfect placenta, the growth of the foetal tissues is evidently dependent upon active absorption of uterine fluids, and this same would seem to obtain to a marked extent in ruminants. In man, and the higher animals this is not so clear, but evidently the placenta of the growing ovum exercises a peculiar stimulation upon the uterine wall in its immediate neighbourhood. That uterine wall need not be already in a modified condition. The escape of the ovum and its fertilisation, while frequently associated with menstruation is not necessarily connected therewith, and, as Dr. Webster points out very clearly, pregnancy may occur in a girl before the onset of menstruation, at a

¹ I am glad to see that this very full and thorough work of Dr. Webster has already arrived at the dignity of having been translated and published in Germany.

time when the mucosa cannot be modified by that process; it may occur late during the period of lactation when there is no menstruation, and after the mucosa has been completely renewed, or again at the menopause during a period of amenorrhoea. The view of Lawson Tait and of Berry Hart that the ovum can only graft itself on a connective tissue from which the covering epithelium has been removed would therefore seem untenable. We are led to hold that this grafting is due to an influence exerted by the active ovum upon the cells in its immediate neighbourhood. The formation of the decidua vera is the result of this influence. In short, as shown by comparative studies, before the fixation of the ovum the maternal tissues exhibit a remarkable activity, the glands in the neighbourhood enlarge and become more tortuous, the interglandular substance proliferates, the submucous capillaries dilate and form a well marked layer beneath the surface of the swollen decidua.

While this is taking place, the ovum has been undergoing rapid cell division, and, in place of the single cell, there is developed the early embryo, with its outer covering of epiblast. As Dr. Webster shows from his own studies of early human ova, both uterine (three and four weeks) and ectopic (four, five and eight weeks), and Minot and Kastschenko had already recognized, the surface of the decidua and of the chorion and chorionic villi of the foetus are covered to a greater or less extent by a remarkable nucleated mass, often vacuolated, presenting no evidences of cell division. The nature of this curious layer has been shown by Hubrecht (in the hedgehog). The outer layer of the epiblast of the embryo proliferates, rapidly forming a protoplasmic coating to the embryo of several thicknesses of cells. This plasmodial mass becomes applied to the decidua, and then becomes vacuolated, so that a reticulated structure is formed connecting ovum and decidua. Dr. Webster suggests that this layer subserves the purposes of fixation and of nutrition or absorption from the decidua, a process which would seem to be in part phagocytic, leading to the destruction of the epithelium lining the uterus, though in man it may be that this action is not so extensive as in some of the lower mammals.

Next, as the embryo develops, it would seem that the newly forming villi of its chorion find their easiest path along the spaces of the reticulations of this plasmodial or "trophoblastic" layer, and so approach the maternal tissues. These same spaces eventually become filled with maternal blood—that is to say, the blood tissues of the decidua communicate with the spaces, and thus the foetal villi float or lie bathed in maternal blood and so absorb nutriment from the

maternal blood, without there being (as was held until quite recently), any layer of maternal cells covering the villi and interposed between the blood-streams of the mother and the foetus. The method whereby the maternal blood comes to bathe the villi would seem to be clearly demonstrated by the photographs of Webster's sections from early cases of ectopic gestation, and corresponds to what has been shown to occur in the hedgehog, bats and rodents by Hubrecht, Van Beneden, Duval and other observers, namely, "the foetal trophoblast advances into the decidual tissues throwing out processes of different shapes and sizes. As Webster points out, this can only be by the phagocytic action of the trophoblast and absorption of the tissue by the process. Soon the trophoblastic processes spread along the walls of the maternal blood sinuses, and even penetrate them, and, having once penetrated them, permit the blood to make its way between the trophoblastic cells, and so to surround the villi. In later stages, this foetal lining becomes flattened out and disappears almost entirely. These stages have long been misinterpreted, and the burrowing inwards of the foetal tissues has been mistaken for, and described as, an outward extension of the endothelium of the sinuses.

When once the maternal blood is thus established in the spaces of the reticulum we have the earliest stage of the placenta, in which the foetal villi, composed entirely of the lower unaltered layers of the epiblast, lie bathed in the maternal blood. Very soon, it would seem, the villi gain a fuller development; the foetal mesoblast, with its blood vessels, advances into them; and again, from now onwards, little buds or projections of epiblast are to be seen on the chorion; the mesoblast, with its vessels, advances into them; they grow in length and approach the decidua, and so are formed new villi, some of which become attached to the decidua by their swollen ends. The trophoblastic reticulum gradually disappears until but few remnants—small masses of undifferentiated cells—are to be seen; the maternal portion of the placenta grows relatively little beyond the earlier stages, so that eventually the complete placenta is developed, consisting in the main of foetal tissues—of villi, with a vascular stalk, covered by a thin layer of epiblast, lying in spaces, through which circulates the maternal blood.

There are many points upon which I have not touched in this rapid, and I trust not too involved description of the development of the placenta; the intimate structure of the decidua, the formation of the decidua serotina, the intimate structure of the placental chorion, all have been passed over. Much may be learnt concerning these sub-

jects by a study of Dr. Young's paper and Dr. Webster's monograph. I have wished to reduce the subject to its simplest elements and to represent the parts played by the maternal and foetal tissues respectively, and to give a basis for sound pathological considerations.

It will be seen that the earliest stage is a reaction on the part of the maternal tissues, the later stages an active development not to say invasion of foetal epiblast and mesoblast.

If in the early stage the ovum is capable of setting up so profound reaction in its neighbourhood why, it may be asked, is it that we do not meet with ectopic pregnancy almost as frequently as if, not more frequently than uterine? The obvious though perhaps not wholly satisfactory answer to these questions is that only in the uterus under physiological conditions do we find tissues capable of reacting to such an extent as to ensure the continued development of the ovum, or, perhaps, capable of reacting to any degree. So extensive a change as that occurring in the uterine mucosa, connective tissues and vessels at the future placental site must in the first place require tissues capable of undergoing these modifications and again must be largely of the nature of a reflex nervous act, the result of a stimulus that has more than local effects, or in other words the stimulus must act along special paths. That this is so I shall proceed to show later. The reflex to this stimulus can only occur in certain definite areas; in the properly developed organism in one area, the uterus; in the imperfectly formed organism in two, namely the uterus and the Fallopian tubes. For the more carefully the various cases of ectopic pregnancy are studied the more assured are the numerous observers that ectopic pregnancy never *originates* in the ovaries themselves, in the peritoneal cavity or elsewhere, save in one or other portion of the Fallopian tubes—either where these pass through the substance of the uterine wall (interstitial) in the tube proper (ampullar) or in connection with the free end of the tube and the fimbriæ (infundibular).

To explain why this should be so we have, with Webster, to fall back upon comparative anatomy and the development of the female sexual organs.

In forms in which two separate oviducts persist, the ova may gain attachment and placenta may be formed at any point along their course. In higher forms, with the fusion and union of the cavities of the lower ends of the two oviducts to form a uterus, the upper free portions of the oviducts—the Fallopian tubes—became in the perfectly developed individual mere passage ways for the ova, and the reaction between embryo and oviducal wall which leads to the formation of the placenta can only take place in the uterus. In the imperfectly

developed individual we must assume that portions, at least, of the mucosa of the Fallopian tubes retain their original powers of reaction towards the ovum, so that if by any chance the ovum becomes arrested on its downward journey it can in these individuals induce the development of a Fallopian decidua, and so ectopic pregnancy may be initiated. It is interesting to note that Webster has found that when ectopic pregnancy is proceeding in one tube the mucosa of the other may show decidual changes—a clear proof of what has already been stated, that the change in the maternal mucous membrane, the development of the decidua, is largely reflex, due to the stimulus exerted by the presence of the growing ovum. It may be stated as a law of reflex action that in paired organs a given strength of stimulus leads to reaction being manifested not only on the one side, but in a similar area on the other.

Once the decidua is formed and the chorionic villi grow into it, the stages of development of the ectopic placenta are in every respect comparable with those of the growth of the uterine placenta, though as might be expected the thin muscular wall of the tube and the difficulty which the shape of the organ presents to an expansion which shall keep pace with the growth of the embryo introduce modifications in the extent of placental development.

According to the fate of the growing embryo and to the region of primary attachment, we can now simplify our classification of ectopic pregnancies, and the following table, epitomised and modified somewhat from Dr. Webster's arrangement, would seem to include all the forms that have been fully studied up to the present time.

ECTOPIC GESTATIONS may be :

Ampullar—Commonest form.

Interstitial—In connection with the interstitial uterine end of tube.

Infundibular—In connection with free end of tube.

I. AMPULLAR :

(1) *Simple* : The tube not undergoing rupture. (*Tubal*).

i. Persistent, continuing to full term.

ii. Arrested, in one or other way *i. e.* by total abortion (through fimbriated end) into peritoneal cavity, by hæmotosalpinx, pyosalpinx, absorption, mummification, adipocere formation.

(2) *Compound*¹ :

i. Rupturing into broad ligaments. (*Tubo-subperitoneal*).

a. Gestation continued within ligament.

b. Gestation continued after secondary rupture into peritoneal cavity. (*Tubo-subperitoneo-peritoneal*).

c. Gestation arrested by hæmatoma, suppuration, mummification, &c.

¹ I introduce this term which seems to me useful, from analogy between these pregnancies and fractures.

ii. Rupturing into peritoneal cavity. (*Tubo-peritoneal*.)

a. Gestation continued.

b. Gestation arrested by hæmatocele, peritonitis, mummification, &c.

II. INTERSTITIAL :

(1) *Simple* : (*Tubal*).

i. Persistent.

ii. Arrested.

(2) *Compound* :i. Rupturing into uterine cavity. (*Tubo-uterine*)ii. " " peritoneal cavity. (*Tubo-peritoneal*)iii. " " both uterine and peritoneal cavities. (*Tubo-utero-peritoneal*).iv. " " broad ligament. (*Tubo-subperitoneal*).

III. INFUNDIBULAR : rare ; the classification of the ampullar varieties may possibly be applied to this form. Among the compound forms two are often recognized :

a. *Tubo-ovarian*, *i.e.*, sac becomes adherent to ovary.²b. *Tubo-abdominal*, *i.e.*, sac becomes adherent to abdominal viscera.

Ectopic gestation is, however, but one of the numerous pathological conditions which are elucidated by and in their turn throw light upon the development of the placenta. Another important condition is referred to by Professor Young, namely, the development of tumours in connection with the placenta and placental remains.

"One cannot," says Young, "fail to observe the remarkable similarity between the early stages of placental formation and those seen in the development of malignant epithelial tumours. In both there is epithelial proliferation, followed by epithelial invasion and accompanied by irritative changes in surrounding tissues. During placental formation the maternal tissues are invaded by foetal epithelial cells, cells, much in the same way that the sub-epithelial stratum of the skin or mucous membrane is encroached upon by proliferating epithelium in cancer formation."

The conditions indeed are very similar : we have here that same presence of rapidly proliferating embryonal cells manifesting intense vitality which, in a recent article in this JOURNAL, I pointed out was

² The view is here taken that primary ovarian pregnancy does not occur. This is Webster's view and it is supported by the fact that in no case up to the present time has it been clearly proved that the condition has started in the ovary, the appearances in all cases can equally well be explained by considering the placenta as primarily developed from the infundibular region. Still it must be remembered that as yet no complete proof has been advanced that primary ovarian pregnancy is impossible. H. Ludwig's most interesting case of "simultaneous uterine and ovarian pregnancies" (*Wiener Klin. Wochenschr.* July 2nd, 1896 ; epitome, *B. M. J.*, Nov. 14th, 1896.) may well be infundibular, for the ovarian fimbria of the tube spread into the sac and the placenta was along the uterine attachment of the sac, the remains of the ovary being away from the placenta. This is the first case recovered of what by the above classification may be termed a persistent infundibular tubo-ovarian pregnancy.

in itself sufficient to explain the progress of malignant tumours. And Young continues, "There seems no reason why any portion (of the foetal epiblast), left behind in the separation of the placenta should not continue to grow, and invading still further the uterine mucosa assume all the characters of a definite tumour growth."

That uterine tumours may develop from placental relics is now well recognized. As I have pointed out, the placenta is in the main a foetal structure, nourished by the maternal blood, and being in the main foetal, it is possible that such tumours can be of foetal origin. Meyer has described an epitheliomatous growth which followed the removal of a hydatiform mole, in which the resemblance of the invading columnar processes to chorionic villi was especially noticeable. Meyer, it is true, did not venture to describe the growth as entirely foetal, but imbued with the present German view, suggested that the epithelial element was of maternal origin, and that the chorionic villi had protruded into it, a view which our present knowledge of placental structure renders eminently improbable. But Frænkel has published a case of "carcinoma developing from chorionic villi." Here also malignant disease of the corpus uteri followed removal of a vesicular mole. This growth had a papillary form, invaded the deeper tissues and gave rise to metastases. Microscopically it was shown to have originated from the remnants of chorionic villi left after the removal of the mole, since the structure of the uterine glands was still recognisable and its histological appearance was quite different from that of cancer of the endometrium of the corpus uteri."

I have been unable in a hurried search to discover other cases of this nature, but these two would seem to support the view that (not only can cells derived from one tissue invade others and form metastases, but also that) cells originating from another individual—the embryo—are capable of assuming similar powers of invasion and metastatic growth. That this process of invasion should be developed by the multiplication of parasites within those cells seems to me most unlikely when it is remembered that these same cells of the chorionic villi, under physiological conditions, manifest this same power of invasion to a considerable, if strictly limited, degree; or otherwise, these facts brought forward by Professor Young seem to be wholly in accord with the argument adopted by me in the article to which I have already referred.

A consideration of another most interesting form of tumour of placental origin—the so-called malignant deciduoma—must be left for another occasion. To discuss the various theories propounded as to its nature would unduly prolong this article. Sufficient has, I trust, been already brought forward to show that a fuller knowledge of the placental structure materially advances our views in many directions.

J. G. Adami.

Reviews and Notices of Books.

Prize Essays on Leprosy. By NEWMAN, EHLERS, and IMPEY.
London: The New Sydenham Society. 1895.

This volume contains three valuable essays on leprosy.

The first is an account of the decline and final extinction of leprosy as an endemic disease in the British Islands. It is by George Newman, M.D. It represents a great amount of painstaking work. Dr. Newman shows that leprosy reached its zenith in the thirteenth century and became extinct in the eighteenth century. During this period there was a large number of special hospitals or institutions founded, where lepers were confined, not however always alone. It does not appear that at any time there was strict isolation of the lepers. The final extinction of the disease is attributed not to the imperfect isolation, but to the gradual improvement in diet and method of living among the poor. The diet of the English people during the leprosy period consisted chiefly of bad meat and stale fish, there being an almost entire lack of vegetables. The author is not inclined to attribute to the stale fish diet a preponderating influence in bringing about the disease as has been alleged by some writers.

The second essay, by Dr. Edward Ehlers of Copenhagen, is on the conditions under which leprosy has declined in Iceland and the extent of its former and present prevalence. Dr. Ehlers from his researches believes that leprosy was introduced into Iceland, after the crusades, from Norway. In the seventeenth century the disease was very prevalent, little being done in the way of isolation or otherwise to limit its spread. A great epidemic of smallpox in 1707, and of measles in 1846, did more than all other measures to lessen the number of lepers, as they were the first to succumb to any epidemic influence.

At the present time it is computed that there are about 200 lepers in Iceland. As we have a considerable number of Icelanders in Manitoba, it is important that a strict watch should be kept on all emigrants coming from Iceland.

Dr. S. P. Impey, Superintendent of the Robben Island Leper and Lunatic Asylum in South Africa, deals with leprosy in South Africa. It is a report on the facts as to the recent increase of leprosy at the Cape and its prevalence in South Africa.

Dr. Impey refers to an interesting point in his essay, viz., the cure of the disease in some cases. In the leper wards of the Robben Island Asylum there have been for several years about 100 cured cases, many of

them of long standing. In one case the disease was contracted 50 years previously.

Dr. Impey believes that the contraction of the tissues resulting from the inflammation caused by the bacillus in the nerves is the cause of the death of the bacilli.

The most recent contribution to the action of the diphtheria antitoxin is from Prof. Paltauf of Vienna. In 1100 cases of diphtheria in various parts of Austria treated by antitoxin, 970 recoveries took place, a mortality of $12\frac{1}{2}$ per cent. The report furnishes strong evidence as to the great value of the treatment in the diminished mortality, and also when it shows that the earlier the treatment is used, the more effective is its action. In the cases where the injections were used as early as the second day of the disease, the mortality was 6.7 per cent. while in cases first treated on the third day it amounted to 19 per cent. and those treated on the fourth day to 23 per cent. On and after the sixth day it was upwards of 33 per cent. When it is remembered that in previous years the mortality seldom was under 40 per cent. it is clear that we have in the antitoxin a measure exceeding all others in usefulness.

Physics for Students of Medicine. By ALFRED DANIELL, M.A., LL.B., D.Sc. &c., Examiner in Physics to the Royal College of Physicians of Edinburgh, &c., &c. Macmillan & Co. 1896.

In this manual, the author has brought together the main principles of physics, and while, owing to its size, it is not intended to be exhaustive, still all the important facts of the science are presented in a clear and instructive manner. Those points which may be considered to concern students of medicine more closely, are treated in greater detail than others which are of general interest only. If there is any fault to be found with this little volume, it is that the author has attempted to bring too much material within the limits of a student's manual. For the student who desires to acquire a good knowledge of the elements of physics to which he can add later by the perusal of more extensive works, this volume is to be recommended.

The Student's Medical Dictionary. By GEORGE M. GOULD, A.M., M.D. Tenth edition, re-written and enlarged. Blakiston, Son & Co. 1896.

The popularity of Gould's Medical Dictionary is amply shown by the fact that it has now reached the tenth edition. The present volume has been enlarged and re-written and is designed to replace the "New Medical Dictionary" and the Student's Medical Dictionary, the plates of which have been destroyed. The features which rendered previous editions so acceptable to student and practitioner alike are still prominent in the present work. While not aiming at the encyclopædic character of the larger dictionaries, the author has succeeded in making this volume one

which will supply all the information required in the great majority of instances. Tables of the various bacilli, micrococci, leucomaines, &c., will be found very serviceable. It is more complete and more up to date than any other medical dictionary of similar dimensions, and is to be cordially recommended.

E. J. S.

Hydro-Electric Methods in Medicine. By W. S. HEDLEY, M.D.
Second edition. H. K. Lewis. 1896.

Dr. Hedley in the present volume describes the hydro-electric bath, the "Faradaic" bath, the electrical bath and the electric douche. The physics of the hydro-electric bath are dealt with in the first chapter and the therapeutics of the bath and the methods of administration are fully described. The fact that certain diseases of children and certain diatheses are said to be benefited by the systematic application of hydro-electric methods will render the book valuable to those who intend following this line of treatment.

E. J. S.

The Physicians' Visiting List, for 1897. Philadelphia. P. Blakiston, Son & Co.

This popular visiting list is now in the forty-sixth year of its publication and is so well known that little need be said. It contains, as usual, not only the blank leaves for the visiting list, but also other blanks for memoranda, addresses, accounts, &c., &c. Besides these, a dose table, a table of metric and apothecaries' weights and measures and much other useful information. From personal experience we can confidently recommend this list.

Literary Notes.

With the January issue of the *Edinburgh Medical Journal* a new series will be commenced. Dr. G. A. Gibson will continue as editor, assisted by a large staff of contributors in the various departments of medicine and surgery. The journal will, as formerly, be issued in octavo and each number will contain not less than ninety-six pages.

The members of the Medical Profession in Scotland, and Scottish Alumni resident elsewhere, have determined to have a Journal in which Scottish work and teaching in all departments of Medicine should be more fully represented than they have hitherto been.

The journal will be issued monthly, beginning in January next, and will consist of about 96 pages octavo. The aim of the committee and of their editor will be to lay before the readers of the journal representative work from all parts of Scotland—not only from Edinburgh, Glasgow, Aberdeen, St. Andrews and Dundee, but also from the country districts, where much valuable work is done, which, in great part, has been lost to the profession.

This journal will be appropriately named *The Scottish Medical and Surgical Journal*." It is under the direction of Professor Simpson, Edinburgh ; Professor Annandale, Edinburgh ; Professor Stephenson, Aberdeen ; Professor Hamilton, Aberdeen ; Dr. Joseph Bell, Edinburgh ; Dr. Clouston, Edinburgh ; Dr. John Wylie, Edinburgh ; Dr. Underhill, Edinburgh, and Dr. J. W. Miller, Dundee, and is edited by William Russell, M.D., F.R.C.P., Ed., and a large and efficient staff.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Annual Meeting.

The twenty-sixth annual meeting was held on Friday, Oct. 2nd, 1896. Dr. A. D. Blackader, President, in the chair.

The members present were:—

Drs. J. G. Adani, J. H. B. Allan, Jas. Bell, G. E. Berwick, H. S. Birkett, A. D. Blackader, E. H. Blackader, G. G. Campbell, A. N. de Martigny, D. J. Evans, F. G. Finley, J. L. Foley, N. D. Gunn, D. F. Gurd, H. D. Hamilton, W. F. Hamilton, J. M. Jack, W. H. Jamieson, Wyatt Johnston, H. A. Lafleur, F. A. Lockhart, C. F. Martin, J. A. Macphail, J. B. McConnell, S. R. Mackenzie, A. E. Orr, A. Proudfoot, T. D. Reed, G. T. Ross, F. J. Shepherd, A. L. Smith, Jas. Stewart, A. E. Vipond, G. Wilkins and C. F. Wylde.

The minutes of the last annual meeting were read and confirmed.

Dr. J. M. JACK, Treasurer, read his annual statement showing that the finances of the Society were in the following condition :

Receipts for the session 1895-96.

Cash balance in Molsons Bank.....	\$155	25
Interest for the year 1895	7	27
Rental of Society's rooms.....	24	00
Sale of 6 vols. Proceedings.....	6	00
Subscriptions from members.....	630	00
		872 52

Expenditure for session :

Rent of rooms for one year.....	\$425	00
Stationery, postage, printing and current expenses.....	253	01
		678 01
Cash balance.....		\$194 51

Assets :

Arrearages in members' subscriptions.....	\$190	00
Rent due for rooms.....	36	00
Society Furniture.....	210	00
Cash balance.....	194	51
		630 51

Liabilities :

Rent due for two months.....	\$ 70	84
Due Montreal Medical Journal Co.....	96	00
Other expenses.....	20	00
		186 84

Nett assets..... \$443 67

Dr. G. GORDON CAMPBELL, Secretary, reported a gratifying increase

in the attendance for the past session. The average number per meeting had risen from 40 to 47. The largest attendance at any meeting was 95, as against 63 last year, and the smallest 28, as against 18 the previous year.

During the year 22 new members were enrolled, making a total of 142 ordinary members, and besides there were at present 17 temporary members, making a grand total of 159 members.

*Thirty-eight members contributed the 120 items of the programme in which there were 25 papers and 21 case reports. The following table shows the classification:

	Medicine.	Surgery.	Gynecology.	Obstetrics.	Ophthalmology.	Physiology.	Anatomy.	Orthopedics.	Legal Medicine.	Pathology.	Dermatology.	Bacteriology.	Pediatrics.	Physics.	
Living cases.....	3	10	..	..	..	2	1	2	..	..	..	..	..	..	= 18
Path. specimens..	16	14	12	1	1	..	..	..	6	1	1	..	..	..	= 52
Case reports.....	8	2	2	2	..	..	..	..	..	4	3	..	..	..	= 21
Papers.....	4	1	2	1	..	1	..	..	..	2	..	..	1	..	= 11
Discussions.....	2	1	..	..	..	..	..	..	..	..	..	..	1	..	= 4
Demonstrations..	1	..	..	..	1	..	..	..	1	..	..	..	..	1	= 4
															110

Dr. F. A. L. LOCKHART, Librarian, reported that during the past year but few changes had occurred in the Library.

The Society had continued its subscriptions to *The Lancet*, *The Medical News* and *The American Journal of the Medical Sciences*.

The Society was indebted to the Editors of the MONTREAL MEDICAL JOURNAL, *Canada Medical Record*, *La Clinique*, *L'Union Médicale* for donating the respective journals for the current year.

Owing to the generosity of Dr. T. G. Roddick he was enabled to have several volumes of magazines bound. These were all periodicals which had been collecting for the last two or three years and were becoming destroyed, but which were now rendered serviceable. They are as follows: *Lancet*, 6 vols.; *Medical News*, 5 vols.; *Medical Record*, 5 vols.; *New York Medical Journal*, 4 vols.

Dr. F. W. Campbell donated one volume of Robert's System of Medicine,

The Librarian suggested that, in order to be of more practical use than it is at present, the library should contain more current maga-

zines, at least one in each branch of medicine. An effort was made during the past year to do this, but failed. It might be urged that there were first-class medical libraries elsewhere in the city, but none were so conveniently situated for the majority of the members. A society of the standing of the Montreal Medico-Chirurgical Society should have a really good library, and this could easily be obtained by members presenting to the Society a subscription for one year to one or more medical periodicals. If this were done, it would not be long before the Society would possess a library of current medical literature of which it might be proud.

The following officers were elected for the session 1896-97 :

President—Dr. GEORGE WILKINS.

1st Vice-President—Dr. J. G. ADAMI.

2nd Vice-President—Dr. F. R. ENGLAND.

Secretary—Dr. G. GORDON CAMPBELL.

Treasurer—Dr. J. M. JACK.

Librarian—Dr. F. A. L. LOCKHART.

Council—Drs. JAMES BELL, A. D. BLACKADER and F. J. SHEPHERD.

Dr. A. D. BLACKADER, the retiring President, then read the following address :

This evening closes another year's work for our Society, and it is befitting that, before vacating the office to which you in your courtesy called me last year, I should briefly lay before you a review of the work accomplished during this period.

Our meetings, as our Secretary tells us, have been well attended during the year, the average number of members present being considerably higher than that of any previous year, and nearly double the attendance of five years ago.

The papers presented have, speaking generally, been of a high order of merit, and have been followed by interesting discussions. As an indication of the high character of these papers, and of the position which this Society is taking in the medical world, I may mention the very frequent quotations made from them which appear, not only in American and English Journals, but also in the Reviews published on the Continent of Europe. Out of the 98 papers, abstracts of which appear in the last volume of Braithwaite's retrospect, there were three papers read by members of our Society.

Not only have our meetings been well attended, but, I am happy to say, they have been most harmonious. No source of discord has, to my knowledge, occurred among the members, and I am not aware of one acrimonious discussion having taken place in our rooms during the year.

During the past year many patients have been brought and exhibited at our meetings, illustrating either some rare form of disease, or the result of new and important surgical operations. Among those calling for special mention are the following :

A Case of Meningeal Hæmorrhage necessitating Ligature of the Carotid, by Dr. Shepherd.

A Case of Temporo-Sphenoidal Abscess, following Middle Ear Disease, by Dr. James Bell.

A Case of Perforated Gastric Ulcer, by Dr. Armstrong.

A Case of Removal of the whole Upper Extremity for Sarcoma, by Dr. Armstrong.

A Case of Removal of Cyst from Brain for Relief of Jacksonian Epilepsy, by Drs. Armstrong and Finley.

A Case of Angioma of the Skull, with crepitations of the skull cap over a large area, by Dr. Armstrong.

Two Cases of Acute Muscular Dystrophy, by Dr. James Stewart.

A Case of Transposition of the Viscera, by Dr. T. P. Shaw.

A Case of Volitional Tremor simulating Insular Sclerosis, by Dr. G. Gordon Campbell.

All the cases were of the highest interest, and many of them have been noticed and commented upon both in England and America.

The pathological specimens shown have been numerous, some of them presenting very rare conditions, but all of them of much interest. Among the more notable ones I would mention the following :

Distoma of the Liver, first authentic case recorded in America, Dr. Wyatt Johnston.

Mycetozoa Pedis, second case shown to the Society. The first case was shown last year, and was also the first authentic case recorded in America, Dr. Adami.

Gummata of the Heart, Drs. Wyatt Johnston and Finley.

Phthisis Bulbi, Drs. Mathewson and Buller.

Primary Cancer of the Liver, Dr. Martin.

Dissecting Aneurism, Dr. Adami.

Foaming Liver, Drs. Adami and Jamieson.

Primary Epithelioma of Urinary Bladder, Dr. Jamieson.

Four discussions have taken place during the year: one on the etiology of cancer; a second on the diagnosis and treatment of diphtheria; a third on albuminuria, and a fourth on the etiology and treatment of summer diarrhœa.

The subjects in themselves were of much interest, and the most recent work in connection with them was presented in an exhaustive and able manner by the readers of the several papers. It is much to

be regretted that several of these papers have not yet been placed in the printer's hands, and will, therefore, fail to appear in the Transactions of our Society.

I am sure I may express the grateful sentiments of all the members of our Society to those who, with commendable zeal, and the expenditure of very considerable trouble and time on their part, have brought these specimens for exhibition to our Society.

So interesting a feature of our regular meetings have these pathological specimens become, that it is felt that a brief half hour at the commencement of the meeting is all too short for their exhibition and discussion, especially as it is the half hour during which members often find it difficult to be present, owing to urgent visits which have sometimes to be made after office hours. This year it is proposed to devote an additional evening, one Saturday every month, entirely to pathology. We are confident that it will prove sufficiently interesting to ensure a full attendance. This will prevent the crowding together of valuable specimens, which of late has frequently interfered with the full discussion of important points. It will, also, allow more time for the paper of the evening and for other work of the Society.

Our Society has during the past year again endeavoured to make its influence felt in the councils of our city. The change proposed by the Health Committee in the administration of the Civic Hospital was felt to be most injudicious, and liable to increase seriously the difficulties already met with in securing prompt attention and isolation for cases of infectious disease. Owing in great measure to our emphatic protest, and to the action of the Montreal General Hospital, the proposed change has not been pressed, and, for the present, the matter is in abeyance. It is hoped that next year this important hospital may be maintained according to the original agreement.

Before closing, permit me to make a few suggestions on one or two matters which I consider of interest to our Society.

As to our membership. In the city this already embraces almost all the English-speaking physicians, and, therefore, we cannot expect any large increase in this direction; but there are many physicians in neighbouring towns and in the country who would be very glad to join us, and to contribute occasionally to our discussions, with benefit both to us and to themselves. At present we exact from all such who join us the full fee of five dollars. This, in connection with the expenses attendant upon a visit to the city, loss of time, etc., acts as a deterrent to their presence among us. I should propose that we establish an associate membership which should include all physicians not resident in the city or its immediately adjoining suburbs, who

should pay an annual fee of only two dollars, and perhaps lack the privilege of voting. Possibly under this class of associate members we may permit to enter those who belong to the resident staff of the city hospitals and who at present, I understand, are admitted as temporary members without any fee.

Our present rooms are already becoming too small for us, and although there are still two more years to elapse before our lease expires, it appears to me desirable, even at so early a date as this, to give the matter our attention. At present our yearly rental divided by the 18 or 20 meetings held during the winter and spring, makes the cost to the society of its room for each meeting night nearly 22 dollars, not including light and attendance. Even for so large an expenditure, our accommodation is not equal to that of some of our sister societies in the city. Could we not possibly amalgamate with them?

Our need extends to the use of one large hall two or three times a month, and the permanent occupation of two or three smaller rooms, for library, pathological specimens, etc. There are several societies which, I think, would be glad to join with us in securing similar accommodation for themselves, and it would be a matter of small detail to arrange that there should be no clashing in the evenings during which the hall was occupied.

Such an arrangement can seldom be made at the last moment; leases will overlap and difficulties will supervene; but, if the matter is given sufficient thought beforehand, such might be easily overcome. I would, therefore, suggest that a committee of active and, may I add, enthusiastic members be appointed to take the whole matter under their consideration.

With regard to our reporting, nothing could work better than our present arrangement. At the same time one must express a hankering after a properly trained stenographer. As a member altogether too old to undertake such a flight, may I, with all the enthusiasm of a Gower, suggest to some of our younger members the advisability of learning stenography, and the desirability that one of our own members should eventually undertake this work?

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXV.

NOVEMBER, 1896.

No. 5.

ON THE TEACHING OF HYGIENE.

The subject of Hygiene and Preventive Medicine is one which for long has been a thorn in the side of Medical Faculties. How is it to be taught? Its scope is enormous, being almost co-equal with that of Medicine itself; for in order to study the preservation of health, and prevention of disease, it is necessary to thoroughly consider what constitutes departure from health, and so to refer continually to what causes disease. Even as ordinarily taught there are three highly important subdivisions of the subject, namely, Preventive Medicine, environmental Hygiene as we may term it, namely, Hygiene of the surroundings of the individuals, i.e., ventilation, water supply and disposal of sewage, and thirdly, Hygiene of Food, pure food and its adulterations and departures from standard. To treat properly the first of these, the Hygienist should be a fully equipped Bacteriologist and Pathologist; to deal authoritatively with the second, he should be a professional engineer and sanitarian; to enter into details of the third, it is imperative that he be an organic chemist of the first order. When we knew relatively little and the subject was in its infancy, it was possible for one man to deal comfortably with all these subjects; but this is no longer possible, and the teaching of Hygiene in every University has, in consequence, suffered. In Great Britain the difficulty is often disposed of by making the professorship or lectureship in Hygiene, one of the stepping stones to professorships in other subjects, and as a consequence the teaching is poor and perfunctory. In Germany, the professors in Hygiene are now almost entirely trained bacteriologists, and but a few of the disciples of Pettenkofer have attempted, with partial success, to cover the whole ground. In America again, it would seem, judging from the department of Hygiene in the University of Pennsylvania, that, following

the German system, the bacteriological aspect of the subject is being regarded as the most important.

For more than two years the Medical Faculty of McGill University has been debating as to how, under the circumstances, to make the best use of Sir Donald A. Smith's endowment of \$50,000 towards the establishment of a department for Hygiene, and as Dr. Craik points out in his introductory address in this number, the solution reached is, that it is impossible to appoint one man to teach the whole subject. Dr. Craik himself is appointed head of the department, but the teaching in the three main branches is given over to those members of other departments who are presumably most competent to deal authoritatively with each special branch of this subject. In this way it is hoped that the subject will be treated in a manner commensurate with its importance in the medical curriculum.

This we believe is a new experiment, and it remains to be seen what are its results. In any case it is better than that system which has been tried in so many Universities and has in general been found wanting. We congratulate Dr. Craik upon this bold solution of the problem.

BRITISH MEDICAL ASSOCIATION.

MONTREAL MEETING, AUGUST, 1897.

Since our last issue much has been accomplished in connection with the forthcoming meeting, but at the same time it is not possible for us to describe everything, because much that has been arranged awaits confirmation of the Council of the Association in London. This much however, may be said, that it has been determined to hold the meetings of the various sections in the large halls and theatres of the various buildings surrounding the campus at McGill, and of the Theological Colleges in the immediate neighbourhood, provided that consent be obtained from the authorities of these latter institutions. In this way the twelve sections will be all within three minutes walk of each other, and it may be doubted whether at any of the previous meetings in the old country the Association will have met in such a convenient suite of buildings.

The great weakness at previous meetings of the Association has been that the reception room has been too small, and as a consequence there has been undue confusion and crowding, when the members have come to get their various tickets, daily programmes, etc. To obviate this it has been determined to erect a temporary large hall in the grounds of McGill, to form a temporary main entrance through which all members will pass in and out. This hall will be about 100

by 50 feet, and will contain counters for the distribution of tickets and journals, together with post and telegraph offices, enquiry office, and adjoining it will be the Secretaries' rooms. Special care will be taken to have the correspondence of members properly assorted for easy delivery to them.

It has been determined that the general meetings and public addresses be held in the Windsor Hall, a building capable of seating close upon 3,000, which is in every way adapted for this purpose.

In all probability the museum, will be housed in the Victoria Rink. This building appears large enough for this purpose, and its situation, close to the Windsor Hall, makes it well suited for the purpose.

The Excursion Committee is busy arranging for the short and long tours in connection with the meeting. The Chairman, Dr. Geo. E. Armstrong, 1127 Dorchester street, Montreal, and the Secretary, Dr. H. S. Birkett, 123 Stanley street, Montreal, will be glad to receive the suggestions of those willing to help make the excursions successful.

In our next number we hope to be able to announce the names of the deliverers of the addresses, and of the chairmen of the various sections appointed by the Council of the Association in London. We would again advise those members of the profession who are not members and who wish to be present at the meetings to send in their applications immediately, so that they may start their membership and receive the *British Medical Journal* on January the 1st.

We gave in our last issue full details of the steps to be taken in order to become members of the Association.

THE MONTREAL GENERAL HOSPITAL FAIR.

The final report of the Managers of the Fair held on the 5th October last and the following days was given in at a meeting held at the Natural History Hall on Tuesday, the 24th November.

The object of the fair was to supply the Montreal General Hospital with a full outfit of Surgical and Medical Instruments and appliances, the fund provided for that purpose by a Bazaar held ten years ago being now exhausted. The most unprecedented success attended the efforts of the management and of the ladies who undertook the heavy responsibility and onerous work during the week of the fair. The total receipts amounting to \$12,934.57 and the net results to \$11,202.50.

After careful deliberation it was resolved that of this amount the sum of \$7,000 should be invested as a permanent fund, to be added to from time to time by legacies and otherwise from the friends of the

hospital, the balance, \$4,200 to be handed to the hospital for the immediate purchase of instruments.

In this connection it will not be amiss to add that one of our most liberal and prominent citizens, and a large benefactor of McGill University, to express his satisfaction at the way the Fair was managed, emphasized his approval by donating the sum of \$1000 towards the purchase of a sterilizer ; one of the pressing requirements of the hospital.

The Montreal General Hospital will now shortly be fully equipped with an up to date supply of Surgical and Medical Instruments and appliances which will enable it to maintain its place in regard to equipment and work, thus fully justifying the confidence reposed in it by the citizens of Montreal during the seventy-five years of its existence as a corporation.

NEW YORK GRADUATES' SOCIETY OF MCGILL UNIVERSITY.

The second annual meeting of the New York Graduates' Society of McGill University, Montreal, was held Tuesday evening November 10, when the following officers were elected for the year :

President—Rev. Dr. E. H. Krans, M.A., rector of St. Ann's Church, New York ; Vice-Presidents— Dr. Wolfred Nelson, F.R.G.S. : Dr. James A. Meek, William de Courcey Harnett, B.C.L. ; Secretary—Dr. W. Ferguson ; Treasurer—Dr. H. N. Vineberg ; Executive Committee—The Rev. J. J. Rowan Spong, M.A., B.C.L., LL.B. ; Dr. George C. Becket, J. A. Stevenson, B. Ap. Sc.

Non-resident Councillors—The Right Rev. J. D. Morrison, M.A., D.D., Bishop of Duluth : the Rev. Charles Bancroft, M.A., New Hampshire ; Dr. William Osler, Baltimore, Md. ; Dr. Thomas Kelly, Omaha, Neb. ; the Rev. J. C. Braco, Vassar-College, New York ; H. Holten Wood, B.A., Darby, Conn.

The following resolution was adopted : " Resolved, That the congratulations of the Society be extended to the Right Rev. Dr. J. D. Morrison, one of its members, upon his election to the Episcopate, news of which we have heard with pride and pleasure."

The graduate of the Faculties of Medicine, Law, Arts, Science and Veterinary Medicine of McGill University, now residents of the United States, says the *New York Times* in noting the meeting, number over 500, of whom 50 live in and near the city.

The Society's sole aim and object is to bring them into close touch and fellowship. The Society will found a scholarship, to be known as the Sir John William Dawson Scholarship, in memory of Sir John

William Dawson, who has devoted his life and energies to making McGill University the leading teaching body in the Dominion of Canada. His students bear him in kind and affectionate remembrance.

ON HOSPITAL REPORTS.

The activity displayed in the Pathological Departments of the two large English hospitals in Montreal, is finding further outlet in the publication of reports from either hospital. Reports of this nature are of the greatest value, not only as giving evidence of the scientific activity reigning in any medical centre, but also as bringing together the investigations which have been published from the laboratories of the hospitals. Up to the present time, the only volumes of hospital reports published in Montreal, have been those edited by Dr. Osler when he was Pathologist to the Montreal Hospital. The second of these was of a general nature and included articles by various members of the staff. We only trust that the publication of the present reports will be the commencement of a series in medicine and surgery as well as in pathology from both of the hospitals.

The Report which is now in course of preparation at the Montreal General Hospital will consist of a complete summary (comprising anatomical diagnosis in each case, with the general reference index), of all the lesions recorded in the autopsies performed during the period from January 1883, to December 1895, inclusive.

The information thus furnished will it is hoped, be not only of general scientific interest to those engaged in pathological work, but will have a special local interest also, as illustrating the relative frequency of pathological conditions occurring in Canada, and as forming a part of the medical history of the hospital.

The reference index will enable those wishing to obtain further details with regard to the cases, to find them without further trouble in the hospital report.

The work is now in the press. By arrangement of the Hospital Committee of Management, the report is to be published at cost price, which for the estimated edition will be 30 cents for unbound copies, and 50 cents for copies bound in cloth. It will form about 100 large octavo pages. Those wishing further copies will please leave their orders with Dr. Wyatt Johnston, Dr. Bazin, Mr. J. Patton at the Montreal General Hospital or with the bookseller.

The report from the Royal Victoria Hospital though containing more matter will of necessity not cover so large a period as the above. It will have as its main feature a very full analysis of the morbid

conditions, recognized in connection with each of the autopsies of the first full year's work of the pathological department. The compilation of this in a form which will be of use in subsequent years, has taken many months of study and now it is almost completed. In addition there will be a reprint of the papers published from the laboratory. The expenses of this work, which like the other is already in the press, are being defrayed by the hospital authorities.

Altogether these two works should do much to extend the reputation of Montreal as a centre of medical activity.

MONTREAL GENERAL HOSPITAL TRAINING SCHOOL FOR NURSES.

The following is the alphabetical list of the successful candidates at the recent examinations of the final class of nurses :

Nurses Fair, Finch, Martin, McEwan, McLean, Munro, Shaw, Windel.

The prize for the best examination in surgical nursing was won by Nurse Shaw, the prize for bandaging by Nurse McEwan.

THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS at its ninth annual meeting held at Richmond, Va., elected the following named officers for the ensuing year, namely : President, James F. W. Ross, M.D., Toronto ; Vice-Presidents, George Ben. Johnston, M.D., Richmond, and John C. Sexton, M.D., Rushville, Ind. ; Secretary, William Warren Potter, M.D., Buffalo ; Treasurer, Lavier O Verder, M.D. Executive Council—Charles A. L. Reed, M.D., Cincinnati ; Lewis S. McMurtry, M.D., Louisville ; A. Vander Veer, M.D., Albany ; J. Henry Carstens, M.D., Detroit ; and William S. B. Davis, M.D., Birmingham. The next annual meeting was appointed to be held at the Cataract House, Niagara Falls, N.Y., Tuesday, Wednesday, Thursday and Friday, August 17, 18, 19 and 20, 1897.

CHANGE OF NAME.—The editors of Mathews' Medical Quarterly announce that with the January issue of that publication its name will be changed to "*Mathews' Quarterly Journal of Rectal and Gastro-Intestinal Diseases.*" This is a change which has been deemed necessary for some time, as it is essential that the title of a medical journal should convey to the reader an idea of its contents, and this has not been the case with its name from the beginning.

There will be no change in the policy of the journal in the least. As it will continue to be the only English publication devoted to diseases and surgery of the rectum and gastro-intestinal tract, the

articles which will appear in it will be limited to these subjects. The journal will continue to be edited by Drs. J. M. Mathews and Henry E. Tuley, and published in Louisville, Ky.

NEW BOOKS, &c., RECEIVED AND NOTED.

A Text-Book of *Materia Medica*. By G. F. Butler, Ph.G., M.D. W. B. Saunders. Mortality from Suicides. Published by the Mutual Life Insurance Company of New York. 1896.

Physicians' Visiting List. P. Blakiston Son & Co. Philadelphia.

Essentials of Physical Diagnosis of the Thorax. By Arthur M. Carwin, A.M. M.D. W. B. Saunders, Philadelphia.

Traitement des Affections Infectieuses du Globe Oculaire par les Injections Sous-Conjonctivales de Sublime, par Jehin-Prume, M.D., Montreal, 1896.

Suspensio Uteri with Reference to its Influence upon Pregnancy and Labor. By Charles P. Noble, M.D. Reprinted from the American Journal of Obstetrics. Vol. XXXIV., No. 2, 1896.

The Treatment of Tuberculosis and other Infectious Diseases with Oxytoxines, By J. O. Hirschfelder, M.D.

Report for the Year 1895-96, presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

What is the Best Method of Making and of Closing the Coeliotomy Incision? By George M. Edebohls, A.M., M.D. Reprinted from the American Gynecological and Obstetrical Journal for May, 1896.

Drainage versus Radical Operation in the Treatment of Large Pelvic Abscess. By Charles P. Noble, M.D. Reprinted from the Journal of the American Medical Association, August 8, 1896.

A New Operation for Certain Cases of Prolapsed Uteri. By Charles P. Noble, M.D. Reprinted from the American Gynecological and Obstetrical Journal for May, 1896.

The Indications for Ventral Fixation of the Uterus. By George M. Edebohls, A.M., M.D. Reprinted from The Medical News, March 14, 1896.

Electricity in the Treatment of Exophthalmic Goitre. By Robert Newman, M.D. Reprinted from the Journal of the American Medical Association, December 7, 1895.

Obituary.

THE DEATH OF SIR JOHN ERIC ERICHSEN.

Sir John Eric Erichsen, the author of the well-known work on surgery, died on the 22nd September, 1896, at the age of 78 years.

Probably no man in recent years, has for so long a period held a more prominent or influential position, among English surgeons, as a surgeon, as a clinical teacher, or been so successful as an author.

He studied medicine at University College Hospital, and became a professor in University College at the early age of thirty-two. The first edition of his surgery appeared in 1853. It was published in one volume of 950 pages. The fifth edition was published in two volumes in 1879. It was translated into German, Spanish, Italian and Chinese. During the American rebellion, the American government gave a copy of the American edition to each army surgeon, but did so without the consent of the author or his publishers. He had held the highest positions that the profession in England could confer upon him, and at the time of his death was president of University College, emeritus professor of surgery and consulting surgeon to University College Hospital, and surgeon extraordinary to the Queen.

As a man he was kind and generous.

Among his pupils were Sir Joseph Lister, Sir Henry Thompson and Marcus Beck.

A correspondent of the *Lancet* gives the following amusing anecdote of the late Sir John Erichsen.

"The late Dr. Hugh McNicol, of Dalnally, Argyllshire, told me of his having once met Erichsen. A serious fracture case occurred in a large hotel in the country and Dr. McNicol was called to it. When setting the limb an old gentleman came to him and said he would be glad to give any assistance required, as he too was a medical man. He was thanked by Dr. McNicol and asked to use extension, etc., and to all the local man's directions, the old gentleman gave ready obedience. The fracture was set and an adjournment made to the smoking room. 'I must thank you for your assistance, Sir!' 'Not at all; I was glad to be able to help in the matter. I think the case will do well, as the setting of the limb is perfect. That's my card.' Dr. McNicol saw 'John Eric Erichsen' on the card, and he told me he never felt so helpless in regard to making a remark fitting for the

occasion. 'I'm glad,' he said, 'the fracture is set properly, for I learned the method out of your own book.' There was good-humoured laughter, and, as they say about other pleasing functions, a happy evening was spent. Within a few weeks of each other they are gone, McNichol regretted in his small sphere as was Erichsen in his larger.

SIR G. M. HUMPHRY.

So many leaders of the profession in the old country have died within the last few weeks, that though to each of them we would consecrate a few pages of our JOURNAL, it is impossible for us to do more than give the briefest notice of their life work. Sir George Humphry will be remembered, not so much as the great surgeon, though his fame as such was wide-spread in all the district between Norwich and the Metropolis, but as a great teacher and as a man of liberal mind and strong personal enthusiasm, to whose guiding genius is very largely due the fact that Cambridge, which thirty years ago yearly gave but two or three degrees in medicine, now stands at the forefront of the English Medical Schools, and in the training of the sciences upon which medicine is based is unequalled by any other university in Great Britain. For it was Humphry, who working with Sir George Paget, encouraged Foster, Balfour, Macalister and others to develop in Cambridge schools of practical physiology, biology and anatomy of the highest order. He himself for long years, first as Professor in Anatomy and later as Professor in Surgery, gave his services freely to the University in order successfully to accomplish the end which he had so much at heart.

As a teacher, few men have more influenced their pupils. His was the true method of *education*, the method of drawing out from each man all that was in him. It was a process often uncomfortable for the student. To sit there with Humphry's glistening eye fixed upon him, the long surgical fore-finger pointing imperatively at him, and the frequent long-drawn "Why?" breathed at him, while the teacher probed further and further into the depths of his ignorance, was often excruciating. Often it was the most uncomfortable sensation that a man experienced during the whole of his University career. But the memories of such periods have remained green in the minds of every one of his pupils, and have, at least taught them to recognize how much of knowledge so-called, is superficial, while the intense personal interest which Humphry manifested in those that came under him, stimulated them to work and gave him an influence throughout the old country such as few surgeons have possessed.

WILLIAM MORANT BAKER, F.R.C.S.

We regret to have to chronicle the death of this excellent surgeon and amiable man, who died at Pulborough, Sussex, England, on 3rd October, after several years of ill-health. Mr. Morant Baker was born in October, 1839, so that he had barely completed his 57th year. While one of the junior teachers at St. Bartholomew's Hospital, he undertook the task of editing the fifth edition of Dr. Kirkes's "Hand-book of Physiology," the work with which his name has been widely known to students of medicine, and whose success as a text book of this difficult subject gained him the confidence of a whole generation of instructors and students. He succeeded Sir William Savory as lecturer in physiology at St. Bartholomew's in 1869, and held the appointment for 16 years. He was elected assistant surgeon of St. Bartholomew's Hospital in 1871 and surgeon in 1882.

His reports of cases attracted wide attention and appeared from time to time in the journals. He was a careful clinical observer and an able and judicious operator. As an examiner at the Collège of Surgeons and the Universities of London and Durham, he was both just and considerate, and his character and personality made him an excellent mentor as well as friend of the student and also of the young doctor, while his kindness of manner endeared him to both.

Failing health compelled him to give up his appointment at St Bartholomew's and seek rest in the retirement of the country, but in September he was taken seriously ill and passed away early in October.

LOUIS LÉON DESAULNIERS, M.D.

We regret to have to record the death of Dr. Desaulniers which occurred on the 31st October last, after only a few days' illness.

He was born at Yamachiche, P.Q., in 1823, and graduated in medicine from Harvard University in 1846.

He was Inspector of Prisons and Asylums for twenty-eight years and for many years chairman of that board.

He was well known in political circles, having been elected member of the Canadian House of Assembly in 1854, and member of the House of Commons in 1867 and again in 1878. He was a Justice of the Peace for the Province and also a Lieut.-Colonel of Militia.