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CANADA
MEDICAL & SURGICAL JOURNAL

APRIL, 1879.

Original Communications.

VALEDICTORY ADDRESS;

TO THE GRADUATES IN MEDICINE AND SURGERY,
McGILL UNIVERSITY,

Delivered at the Annual Convocation held on the 31st of March, 1879

BY GEORGE E. FENWICK, M.D.,

Professor of the Principles and Practice of Surgery.

GENTLEMEN GRADUATES,—The time has arrived when the relations between us as teacher and student must cease. Steady and persevering industry, which has marked your career throughout your pupilage, has now been crowned with success, and you have been admitted into the antient and honourable fraternity of medical and surgical practitioners. In offering the congratulations of this Faculty on this auspicious occasion, it becomes a pleasing duty to add a few words of counsel and advice touching the duties you have assumed as well as concerning the career which we all hope you will follow with success in the business of your lives. Ponder well on the important nature of those duties, for they are nothing less than the care and guidance of your fellow-men under the most trying circumstances. Duties of the greatest interest to the public as well as to yourselves, and for the faithful performance of which you will be held to strict account. Your career will be narrowly scrutinized, as to your keeping is entrusted the credit and

reputation of our Alma Mater. We are members of one family, and disgrace or discredit falling on any one member must be felt by all. There are a few suggestions that may not be considered out of place, and which will, if followed, conduce to your personal comfort and to success in your career. Attend strictly to your own health. Bacon remarks that a "sound state of health begets a natural vigour of the faculties." No class of men require a larger share of bodily vigour than physicians. Who more exposed to the baneful influence of malaria, or the germs of contagious or infectious disease than the physician. In epidemic visitations, whilst other classes of the community can seek protection, by isolation or abandonment of localities infected, physicians are called upon to remain and risk their lives in the service of others. With the heroism and pluck of the soldier they forego all considerations, join the forlorn hope, and advance to the breach with unswerving faithfulness.

Theirs not to make reply,
 Theirs not to reason why
 Theirs but to do and die.

Need I refer in proof of this to the recent scourge of yellow fever in the Southern States, when over eighty medical men perished in giving succor to their fellow man. All honour to their memory. Such is the position that each one of us may at any moment be called upon to assume, and as sanitarians we know that strict obedience to the laws of health will aid us in resisting the baneful influence of disease. But again, your vocation is to advise and direct others how to preserve their health, and in so doing you will be expected to know how to care for your own.

I must caution you against the baneful influence of the cup of bitterness. As physicians you are all fully aware of the evils of intemperance, how it beclouds the mind renders helpless the body, and leads to disease and early death. The physician, of all other men, should be at all times in full possession of his faculties, as at any hour of day or night he may be called upon to render assistance, where the life of a

fellow-man is at stake. Under such circumstances the public will fully endorse the sentiment of Hamlet :

“ Give me that man

That is not passion’s slave, and I will wear him
In my heart’s core.”

In this particular I should advise you to adopt the motto of Othello :

“ I have very poor and unhappy brains for drinking. I could well wish courtesy would invent some other custom of entertainment.”

Another duty to yourselves is to keep pace with the rapid advance that is being made in medical and surgical science. The practitioner who is content with what he has learnt during his pupilage, will soon fall behind, and rightly earn the contempt of his fellow-man. Idleness should be no feature of the honest and true physician ; though you cease to be pupils, you must still be students, as your life should be devoted to observation and reflection. Take stock each year of what you have acquired, and see to it that you have added to your store. To your patients let integrity be your password, truthfulness your breastplate, gentleness and sauvity, with forbearance yet firmness, your guiding-star. Harshness and want of sympathy in the ills of others, will not tend to elevate you in the esteem of your fellow-man. Seek not success through any other channel than close attention to the business of your calling. It is your privilege to relieve suffering, and, under heaven, to save life ; close attention, with a full measure of judgment, and putting in force the practical knowledge acquired at the bed-side in the hospital ward, will be certain of success. In any severe case, where you are in doubt or perplexity, if you have any fear of the correctness of your own judgment, seek the assistance and advice of a brother practitioner of larger experience than your own. Never refuse your aid because of the uncertainty of receiving remuneration, be generous to the poor, remember the words of our blessed Saviour, “ Forasmuch as ye did it unto the least of one of these my brethren, ye did it unto me,” and your reward will be sure. The physician is the custodian of many

family secrets. He is the friend in adversity, the counsellor in time of need. If mishap or disgrace invade the family circle the trusted physician is the first to be consulted. How necessary then for the full exercise of discretion and retinence. How dangerous is the babbler. Remember then the oath you have this day taken ; cautiously, honestly, with prudence and chastity pursue your honorable calling.

I may here remark that a proposal has come semi-officially to the profession of this Dominion to join the ranks of the British Medical Association by becoming members of that Society. The objects of that Society are in every way beneficial to the best interests of the profession, the advancement of scientific knowledge, and the elevation of the standard of medical education. I have no doubt the proposal will be seriously entertained by the profession of the Dominion at the next annual meeting of the Canada Medical Association, to be held in the city of London, Ontario, in September next. It is very desirable that the profession in this country should receive that recognition from the institutions of the Mother Country which is its due. It would appear as though the dawn were breaking in our clouded horizon, and although we may not expect to be placed on the same footing as the older institutions of Great Britain, we may hope that we will not continue to occupy the anomalous position we do at present. My chief object in referring to this matter is to call your attention more especially to the existence of this our national association, to which all members of the profession ought to belong. But more than this, it is much to be desired that branch societies should be established in all the sections of this country. We must be up and doing ; medicine is a progressive science ; there is a large field open to each one of you for observation, and in observing remember that you must not hide your light under a bushel, but seek to emulate the work of those who have enlarged the boundaries of medicine by reclaiming an unexplored wilderness, and laying bare truths which have long lain hid. It requires but a beginning, for you will find that the work will become so engrossing and satisfactory that you will be forced,

from the very love of well-doing, to persevere with all your energy to the end. For what does not the science of medicine in some way bear upon? It analyses the wonderful processes observed in all organized beings—generation, development, growth, nutrition, decay, disease and death. It solves important questions for the legislator, and discloses mysteries to the jurist. To ourselves, it elevates and brings forth the better feelings of our nature, enlarges our sympathy, strengthens our hope, induces self-denial, and leads on to the practice of the greatest of Christian virtues—true charity. Follow on, then, gentlemen, in the honourable career opening before you; may you be worthy sons of this University, full of usefulness and proficiency. You all have the path open to you of shedding lustre on Alma Mater, and in your career may you be full of joy and peace and happiness and good report. GENTLEMEN, FAREWELL.

FIVE FATAL CASES OF CIRRHOSIS OF THE LIVER, WITH AUTOPSIES AND REMARKS.

BY GEORGE ROSS, A. M.; M. D.,

Professor of Clinical Medicine, McGill University.

The following cases of cirrhosis of the liver occurred in rapid succession in the practice of the Montreal General Hospital. They all differ much in their clinical features, exemplifying several of the characteristic phases apt to be assumed by this disease. To some of these attention will be drawn at the conclusion of the Reports.

CASE No. 1.

Intemperance—Dyspepsia—Dropsy—Paracentesis—Death from Peritonitis.—T. C., æt. 50, was admitted 10th Sept., 1878. Family history good, never had syphilis. For twenty years past has been a very heavy drinker of spirits. For eight years has suffered very frequently from sharp and stabbing pains in the hepatic region and behind the right shoulder. Would sometimes be free from these for a week at a time. During last winter these pains were much worse. In May last

began to complain of various digestive disturbances—fulness and feeling of distress at the epigastrium—loss of appetite, flatulence and diarrhoea—the latter being rather troublesome, the evacuations composed principally of mucus containing streaks of blood. There was no vomiting. He also had hemorrhoids. Towards the middle of June he noticed his feet swollen, and about the same time his belly began to enlarge.

On admission the patient was found much emaciated, grey and aged-looking—a thin drawn face with no very marked fulness of the cutaneous capillaries—anæmic but not particularly sallow. Extensive ascites, with very great enlargement of the superficial abdominal veins. No albumen in the urine; other organs normal. On the 17th September he was tapped by Dr. Fenwick with a small aspirator needle, twenty-eight pints being removed. This was followed by fever and abdominal tenderness for a few days, and rapid re-accumulation of the dropsy. Was again tapped, seven days after, in the same way, twenty-four pints were drawn off. During and after this period he was further treated by a pill of digitalis squill and pil hydrarg: potass. bitart, and an occasional dose of elaterium. In spite of this he again required tapping on October 16th, twenty-eight pints being obtained. The operation was done this time by the ordinary large trocar. He was very faint almost immediately after, but beyond this no bad symptoms. Patient continued very weak from this time. On the 27th was again tapped to 23 pints. To alleviate the faintness, this paracentesis was done with a fine trocar, the size of the ordinary exploring instrument. It had been made expressly for the purpose, was provided with a phlange and attached to a rubber tube to conduct away the fluid to a bucket. It answered perfectly well, and the serum ran slowly off whilst he lay quietly in bed. A few hours after, however, he had a severe rigor, followed by great pain in the abdomen, and constant vomiting. In spite of active treatment by poultices, hypodermic morphia, and stimulants, he rapidly sank and died on the morning of the 29th October.

The autopsy revealed nothing beyond advanced cirrhosis of the liver with evident signs of recent peritonitis.

CASE No. 2.

Intemperance—Rapid Ascites—Profuse Hæmatemesis and Death.—C.B., æt. 38, was admitted 12th January, 1879. Has been a tippler for several years—has had delirium tremens three times. Denies ever having suffered from any symptoms of gastric disturbance. No morning nausea or vomiting—no loss of appetite, flatulence or irregularity of the bowels. Has been about and following his trade as usual and did not think there was anything the matter with him until *ten days ago*. Then noticed swelling of his feet and ankles, and very soon after fulness of the abdomen. On admission patient found to be a man of small stature, moderately emaciated. Complexion of a very decided dingy or muddy hue, but no jaundice—capillaries of cheek-prominences much distended and strikingly evident, abdomen greatly swollen, hard, tense and fluctuating—superficial veins much enlarged. Liver,—dullness very much diminished, barely two inches in the line of the nipple. Urine scanty, of a remarkable red color; abundant lithates; no albumen; shows marked reaction for urohæmatin. The feet and legs are moderately œdematous.

He was treated by pretty frequent doses of sulphate and carbonate of magnesia, and a diuretic mixture of acetate of potash, squill and digitalis, with the effect only of maintaining the ascites, without much increase. No notable change was observed until the 24th, when in the evening, without warning, patient vomited up half a pint of dark, somewhat clotted blood. Ice and tannic acid were given, but before morning he had brought up altogether forty-six ounces. The pulse rose to 120 and he felt weak, but the bleeding stopped, and for the next two days, whilst the same treatment was being followed, did not recur, and he was pretty comfortable. There was some diarrhœa with black blood in the stools. At 10 a.m. of the 27th, and again at 1 p.m. he vomited blood profusely—four and a half pints, quite dark and clotted. Was very prostrate after this; small, rapid pulse, pallor and faintness. Was given acetate of lead and an ice-bag applied over the epigastrium. Without further bleeding he died at 5 p.m.

The liver presented the most advanced condition of cirrhosis it is possible to imagine, its weight being only thirty-two ounces—the right lobe rounded and presenting numerous marked projections. It is separated from the left lobe by a broad band of fibrous tissue. Left lobe is a thin, flattened mass, the size of the palm of the hand; entire structure very dense and cicatricial-looking, mostly blackish-green in color. The stomach contained a quantity of bloody fluid. When the mucous membrane was carefully cleansed of blood and adherent mucus no erosions or openings into vessels could anywhere be seen, and the membrane looked rather pale. The small intestine contained a quantity of tarry matters of black color.

CASE No. 3.

Intemperance—Ascites—Femoral Thrombosis—Jaundice—Blood-Poisoning and Death.—E. C., female, house-servant, æt. 27, was admitted 7th October, 1878. Is a very impracticable kind of patient as regards answers to questions. Denies most strenuously having ever been addicted to the use of liquor in excess. Her appearance, however, is much against this, for she has the look of an intemperate and dissolute woman. According to her account there were no symptoms whatever until three months ago, when she noticed a swelling coming in the lower part of the abdomen. Subsequently she lost her appetite, became weak and lost flesh, whilst the swelling continued increasing. Has been stout, but muscles now soft and flabby. Face and skin generally of a dirty sallow color. Slight injection of the veins of the face. Abdomen moderately distended and giving evidence of containing a considerable quantity of fluid. Girth at umbilicus forty inches. Urine scanty, contains abundant lithates; no albumen, and no bile-pigment. By November 4th the umbilical girth reached forty-five and a half inches, and there was moderate œdema of the feet. There was much distress in the breathing. She was tapped with the small trocar on 6th November, and nineteen and a half pints serum removed. The liver-dulness was found diminished to within two inches in the mamillary line. The dropsy re-accumulated,

and a second time, on the 27th November, twenty-one pints were drawn off. On 2nd December she suffered rather suddenly from acute pain in the left calf, which was followed by rapid tender swelling of the limb. There was a tender spot at the lower part of the popliteal space, none in the femoral triangle. (No doubt thrombosis of the popliteal vein.) This gave a good deal of trouble. A week after there was plugging of the right femoral vein with pain and swelling in that limb. About this time also, 10th December, it was noticed that she was becoming gradually but decidedly jaundiced. The urine was dark, but did not for some days give the reaction of bile-pigment, but subsequently the latter was well marked. Jaundice deepened until quite intense. Symptoms of general blood-poisoning showed themselves and the patient lay for several days in a restless, half-comatose state, and finally died insensible on the 24th December.

CASE No. 4.

Intemperance.—Ascites.—Paracentesis.—Uræmic Symptoms.—Death.—C. D., male, æt. 34, was admitted on the 10th Oct., 1878. He is a horse-dealer, and has been for the last fourteen years addicted to considerable and constant excess in the use of spirituous liquors. Has never had any illness whatever, except a few "bilious attacks," as he calls them, during the last four years. Whilst thus affected he lost appetite, felt sick and looked yellowish in the eyes—they would last only a few days. Apart from these turns he has felt quite well until seven weeks ago, when he got diarrhœa, which lasted several days, was succeeded by constipation, and then a second spell of diarrhœa. The latter condition has prevailed to a moderate extent until the present time. Vomiting has of late been of daily occurrence, sometimes more frequent. Appetite very uncertain—at times entirely wanting. No pain about region of liver. A little more than a month ago he observed his feet and ankles swollen, and about the same time the abdomen began to enlarge.

Patient is moderately emaciated, of a very decided sallow, dirty hue, but conjunctivæ quite clear, not yellow—malar

sigmata well marked. Abdomen symmetrically enlarged forty-one and a half inches at umbilicus. Superficial veins considerably distended and distinct. There is evident fluctuation. Liver-dulness seems not much altered. Urine scanty (seven ounces last twenty-four hours,) almost red, with a heavy deposit of lithates, no albumen. By the 24th October the girth had reached forty-three inches, and he was tapped with a fine trocar to relieve the distress from pressure of the fluid; nearly twenty-six pints were removed. Even at this time and for some days after severe symptoms referable to the nervous system were observed. He was drowsy and apathetic. Limbs moved in a dull and sluggish manner, the grasp of the hands was particularly feeble. Pulse 112. The bowels act freely, motions light-colored, like putty. On the 28th his condition was even worse. He was heavy and soporose. On the 30th quite unconscious and restless, sighs a great deal. Dingy, sub-icteroid hue has become much deepened. Pupils contracted, and sluggish. Urine escaping in bed. It is of a deep almost claret-red color, very high Sp. gr. (1032 to 1040,) and with an equal quantity of nitric acid becomes almost solid with crystals of nitrate of urea. From this condition he never thoroughly rallied, although some remarkable intermissions occurred, during which he became quite conscious sometimes for a day at a time. Finally with a dry, brown tongue, sordes, and decided coma, he died November 13th.

CASE No. 5.

Syphilis.—*Intemperance.*—*Dyspepsia.*—*Dropsy*—*Purpura.*
—*Death from Exhaustion.*—I. B., male, æt. 44, was admitted 31st December, 1878. He was first treated for a short time in the surgical wards for an extensive superficial necrosis of the left tibia, accompanied by a large circular ulceration. He was then transferred to Dr. Ross' ward, on account of commencing ascites. He gives an account of having, fifteen years ago, had a chancre followed by a few spots upon the body. Had been very intemperate until three years ago, since when he has not drunk at all. Whilst drinking was frequently troubled with

dyspeptic symptoms—morning vomiting of glairy mucus—flatulence and irregularity of the bowels, (alternating constipation and diarrhoea,) and hemorrhoids, but has had none of these since renouncing stimulants. Has lost forty pounds weight within the last two years. The trouble in the leg began eight months ago by a spontaneous spot of inflammatory swelling which, after a slight injury, rapidly ulcerated, and the dead surface of the shin-bone was left exposed. He is a large man, with flabby, flaccid muscles, face rather pale. Malar prominences and eyelids present venous stellate injection. Skin smooth and dry. Abdomen distended by moderate ascites—girth forty-one inches. Superficial veins considerably enlarged. Feet, ankles and scrotum are œdematous, slight nodes on shins and some copper-colored scars on legs. Vertical liver-dullness, three inches. Urine scanty, dark-brown, with abundant lithates, no albumen. He was treated by diuretics and occasional purgatives, but little impression could be made upon the kidneys, and the dropsy of the abdomen gradually increased. By the 19th February the girth reached 45 inches, and he was tapped with the small trocar, nearly twenty-three pints of serum being removed. Two days after he was languid and weak, and quite delirious, was inclined to retch. Tongue red glazed and irritable. On 3rd March delirium had disappeared, and seemed better. Dilatation of left pupil and slight dropping of left eyelid was observed. On 4th March there was some loss of power in all the branches of the left third nerve. Very drowsy and very weak. Pulse has become morbidly slow—to-day fifty-seven. The following day there were patches of purpuric spots on the back of both hands and wrists, and seemed much exhausted. From this time he lay in a very prostrate condition, and after having been insensible for twelve hours died on the 12th March.

The autopsy showed a rather small, rough, hard and well marked “drunkard’s liver.” No other lesion of moment. There was no sign of visceral syphilis.

Remarks by Dr. Ross.—In the first case death occurred from peritonitis, no doubt induced by the puncture of the trocar.

The danger to be apprehended from simple tapping of the abdomen with trocar and canula is usually looked upon as very slight, so slight indeed, as hardly to require being taken into consideration. Every precaution was taken, the instrument used was purposely very small, and the fluid was gradually removed, to prevent as much as possible the sudden withdrawal of support from the vessels of the abdomen. Probably here the patient's age, his great feebleness, the previous tapplings, (one of which had been followed by inflammation,) all assisted in permitting of the development of a rapidly spreading and fatal peritonitis. The knowledge of such cases (fortunately rare—it is the first I remember to have seen) should cause us to be all the more guarded in our prognosis when performing paracentesis of the abdomen in debilitated subjects.

The latency of cirrhosis of the liver, and the rapid manner in which ascites may begin and advance, are well illustrated by Case No. 2. This patient, C. B., presented, on admission, the characteristic appearance of the subjects of advanced cirrhosis. The liver was found very small. The opinion formed was that he had fully developed fibroid contraction of that organ, yet on the most careful questioning no history pointing towards antecedent disturbance of the digestive system could be extracted, and it was only ten days prior to being first seen that enlargement of the belly was observed. From the extremely shrunken state of the liver discovered at the autopsy, there can be no doubt that the disease must have been slowly developing for many years. Is it not strange, therefore to find, as the final result of what necessarily was an extremely slow process of gradual obstruction in the smaller portal vessels, a sudden outpouring of a large quantity of serosity into the peritoneum? Why should the ascites not have appeared sooner? What disturbed the equilibrium of the circulation in so rude and sudden a manner?

I have several times seen vomiting of blood as a symptom of cirrhosis of the liver. I think, however, it is more commonly met with in the earlier stages, and it is well known that it may be the very first symptom to attract attention. In this case it

was very profuse and uncontrollable. The autopsy demonstrated the entire absence of any, even the slightest, solution of continuity anywhere; the bleeding, therefore, was from the capillaries by diapadesis, showing that copiousness of hæmorrhage is not, as sometimes held, a probable indication of rupture of a vessel. I have seen fatal hæmorrhage in typhoid fever similarly occur from a general exhalation when it was thought to have originated from an ulcerated vessel.

Case No. 3 presented another feature, viz., jaundice. From the gradual manner in which it came on and the period of its onset there can be little doubt that it arose from compression of some of the main biliary outlets by a portion of the liver adjacent which had been undergoing contraction. The symptoms were evidently those of jaundice from obstruction, especially the absence of bile from the stools, and cirrhosis alone will reach any degree without giving evidence of real jaundice, although any depth of the usual unhealthy, dirty, sallow color may be seen. No autopsy was made in this case, and therefore actual demonstration of the real lesion in question is wanting. The venous thrombosis which was a distressing accident in this case, and which occurred in both lower limbs, was probably not directly due to the nature of the pre-existing disease, but rather only to the generally cachectic state of the patient and to the obstructed venous return. As far as I am aware this occurrence is by no means common in cases with abdominal dropsy, but is oftener seen where the great ascending veins are interfered with by tumors, such as ovarian and other enlargements.

In case No. 4 the symptoms of cerebral disturbance were very marked, and extended over a period of some weeks. They consisted in somnolence, great muscular weakness, and sometimes delirium. This condition resembles very closely that of uræmia from Bright's disease, and it is probable that there is a strong resemblance in the state of the blood in the two cases. At any rate, the detailed report of this case (of which the above is an extract) shows that, after this patient had been lying in an almost completely comatose condition, an enormous excre-

tion of urea took place, and coincidentally with this, intelligence returned. When this unusual increase in the urea-elimination ceased, the same indications of poisoning of the nervous system were once more witnessed.

The main point of interest in case No. 5 was the matter of syphilis. There is no doubt that systemic Lues is capable of causing a disease in the liver accompanied by proliferation in the connective tissue and thickening of the capsule, which will, in its clinical features, perhaps closely simulate those of an alcoholic cirrhosis. The history of constitutional infection was clear and the patient gave abundant past and present evidence of lesions due to this cause. The history of intemperance was, however, equally clear. The question, therefore, arose, what is the probable nature of the hepatic disease? The decision I arrived at, and which was confirmed by the autopsy, was that the case was one of ordinary cirrhosis, from alcoholism, and the points depended upon were—the great frequency of alcohol as a cause, and the rarity of syphilis—the plain account of the usual antecedent of gastric disturbances—the absence of attacks of severe pain about the liver, and therefore the improbability of there having been much, if any, peri-hepatitis—the marked presence of the venous stigmata on the face.

COHNHEIM'S THEORY OF TUMORS.

Translated and condensed from Vol. I of his *Vorlesungen Ueber allgemeine Pathologie* (Lectures upon General Pathology).

BY DR. OSLER.

Read before the Medico-Chirurgical Society of Montreal as an appendix to a report of two cases of Kidney-Tumors—Striped Muscle Sarcoma, and Spindle-celled Adeno-Sarcoma,

(Continued from page 347.)

Biology of Tumors.—All parts of the body have definite functions and perform a certain amount of work. Tumors, being atypical, have no such functions. Myomas, striped or smooth, are certainly excitable, but they are never stimulated, from the absence of the necessary nerves. The adenomas and gland cancers do not secrete, partly because they do not stand in a "typical" relation to ducts, but chiefly because the essen-

tial innervation is absent. From a biological standpoint, the chief interest of tumors refers to the laws of their growth and nutrition.

The embryonal germs, out of which tumors originate, require no other positive condition for their development than a sufficient blood supply — qualitative as well as quantitative. An osteom can not arise if the necessary supply of lime salts is not furnished by the blood, nor a lipom develop unless the needful fat-building substances are forthcoming, in quantities over and above what is necessary for the general nutrition. A long-continued elevation of the blood-flow serves very considerably to accelerate and strengthen the growth of tumors, as is commonly seen in the increase of cartilaginous and bony tumors of the skeleton and of dermoid cysts at puberty, and of growths in the breasts and ovaries during pregnancy. It is doubtful whether an inflammatory hyperæmia has the power of exciting an existing tumor-germ to develop, but there can be no doubt, according to the statements of the best surgeons, that an already existing neoplasm can have its growth rapidly increased by congestive and inflammatory hyperæmias, dependent on local irritation. Still these conditions do not suffice to explain the remarkable inequality in the rate of growth of different tumors. In this respect internal conditions, as yet unknown, must play a rôle in the diverse tumor-germs,—perhaps the period of embryonal life out of which the germ originates may have an influence in this way, that the earlier the stage at which the superfluous germs have been produced, so much the greater their rapidity of growth.

The nutrition processes in tumors are simpler than in any physiological organ, inasmuch as the circulation is the only factor which has any influence on the tissue changes. Blood-vessels exist in all new-growths, and they grow and develop just as in organs and tissues in physiological growth, with this difference, that the vascularisation of a tumor is atypical. On this account, they are sometimes poor in vessels, sometimes rich, and this difference is met with in similarly constructed myomas, fibromas, myoscomas, as well as in different sorts of tumors, which at one

time may be sparsely vascular, at another most abundantly provided with vessels, even assuming a condition teleangiectasy. Further, the distribution of the sorts of vessels in tumors is often atypical. Sometimes the capillaries preponderate, at another the veins are chiefly developed, and again other tumors are characterized by numerous arteries, so that they pulsate *en masse*. All the various local disturbances of circulation are met with in tumors—*anæmia*, *hyperæmia* (active and congestive), thrombosis, embolism, hæmorrhage and inflammation, and it not infrequently happens that the whole course of a growth is influenced by certain of these disturbances. The various degenerations—fatty, calcareous and colloid,—are met with in tumors. From these must be distinguished the ossification of the enchondromas, &c., the fatty infiltration of cells of cancer and adenoma of the breast, and the horny transformation of the cells of epithelioma, which represent the regular development of the respective tumor-germs. Necrosis forms the most important and serious nutrition disturbance to which tumors are subject, and to this many sorts are very liable on account of their atypical and irregular circulation. When the entire mass is involved, it is rather a fortunate circumstance, but more commonly, especially in tumors which project upon a free surface, the necrosis is an unwelcome and dangerous occurrence.

What becomes of a tumor?—This is the true cardinal question in the whole pathology of tumors, for its solution can alone afford an explanation of the significance of a growth to the organism. This is a question easier asked than answered, indeed, it can scarcely be settled. In the life-history of tumors there is indeed but one universally valid fact, namely, that a neoplasm never spontaneously degenerates and disappears. The rare elimination by necrosis cannot be called a spontaneous degeneration, any more than the separation of a gangrenous foot, and though fatty degeneration may diminish the volume of a growth, it cannot cause a spontaneous healing. This stability is readily understood if the cause of the tumor lies in an embryonic predisposition. Great differences, however, are observed in their life history. Some, as for example, many

fibromas, lipomas, and exostoses, last the whole life through, or for years are stationary, without exceeding a certain size. Others, again, of identical structure, grow slowly but continually, finally reaching colossal dimensions. Further, the majority of tumors, be they large or small, remain as local formations, limited strictly to the place and tissue where they began to develop; still, a considerable number do not follow this local limitation, but attack in their growth the neighbouring tissues and are followed by the production of numerous similar tumors in more or less distant organs. These latter peculiarities, diffusion, and metastasis, are the distinguishing characteristics of malignant tumors. The grounds of this difference in the growth of neoplasms, whereby tumors of identical structure sometimes remain of limited dimensions, at others become unlimited, have not been sufficiently enquired into. It may be that the embryonic tumor germs are of unequal size, and therefore possess unequal powers of growth; or the difference may lie in the greater or less blood supply. One circumstance must be taken into consideration in discussing the conditions and laws of the growth of tumors, and that is, the influence exerted by the neighbouring tissues. In physiological development, the size and form of each part of the body is the product of the reciprocal action of all its growing tissues. How is it in this respect with the growth of the pathological tumor germs? The neighbouring tissues cannot exert a positive influence on the form and structure of tumor, simply because their growth follows physiological laws with which the tumor germs have nothing to do. It is another question, however, whether the neighbouring tissues cannot influence the growth of a tumor by restraining it. An inhibition, in a mechanical sense, can scarcely be spoken of, for growth is a powerful force, and tumors of various sorts, hard and soft, attain colossal dimensions without the skin, muscle, or contiguous parts, being able to hinder their increase in size. Rather more, indeed, are all tissues pressed aside by the growing neoplasm—muscle, nerves, blood-vessels are compressed, and even the hardest tissues, such as bone, cannot resist the growth of tumors. Though the mechanical resistance of sur-

rounding parts has but little effect in checking the growth of tumors, it is otherwise with what might be called the *physiological resistance*. This is no theoretical conception, for the normal history of development teaches in a most emphatic manner that the respective tissue boundaries are never broken through. The nerves do not grow into the muscles or the skin, but definite cells in the respective regions of the body differentiate into nerves. In the case of glands, embryologists have long recognized that they originate not by a growing in of the epithelial cells into the vascular connective tissue, but by a mutual growth of the one into the other. In the history of the development of tumors, shall not such an important and pervading principle of growth hold good? In the great majority of tumors it is perfectly maintained. They can grow rapidly whether their boundary is diffuse or sharply defined. In the former case they push forward the contiguous tissue, compressing or causing it to atrophy, but they always stop at the limit of the foreign tissue and do not penetrate it. In a number of growths, viz., the malignant, this principle is not followed, the tumors press regardlessly into the neighbouring tissues, and, moreover, secondary growths originate in different localities under their influence.

The malignity of tumors is to be attributed to an absence of the physiological resistance in the parts of the body adjoining them, or at a distance. It depends on the condition of the organism, not on peculiarities in the nature of the tumor itself. The latter is the commonly received view, and in consequence great stress is laid on the arrangement and histological situation of malignant growths. The majority of such tumors present either the epithelial type—cancers, or the connective tissue type—the sarcomas; and one is accustomed to identify malignant growths with one or other of these forms, and even in cases where a chronic and localized tumor has assumed a malignant character, a carcinomatous or sarcomatous degeneration is spoken of in connection with it. The weakness of this exposition is not hard to show. So far as carcinoma is concerned, under this head are described tumors composed of a fibrous stroma, in the meshes of which epithelial cells are imbedded.

A superficial glance suffices to prove that this definition involves the criterion of malignity, for since the carcinomas originate from epithelial cells, the existence of a connective tissue stroma would be impossible, did not the tumor in its growth invade a heterogenous and foreign tissue. But wherein lies the malignant nature of the sarcomas? In reality, an exhaustive review shows that malignancy is not invariable. A very considerable number of them are not so throughout life. Thus, the sarcomatous epulis, which grows rapidly and recurs after repeated removals, never generalizes. Also sarcomas of other bones, of the ovaries, the mediastinum, and the fasciæ, can remain for years, and by their size induce the severest effects, and yet neither invade neighbouring tissues, nor yet become general; and in those sarcomas, whose later course is most malignant, still, as Virchow remarked, a harmless period always precedes the malignant course. Within the past ten years many cases have been recorded of tumors which usually run a benign course, becoming very malignant and generalizing. Among such are the cases of enchondroma described by Virchow and Lücke, of fibromas, of which several malignant examples have been met with. Glioma often runs a most intensely malignant course. So also with certain relatively highly organized tumors—the smooth and striped myomas, and a case is on record of metastases from a simple tumor (adenoma) of the thyroid. From facts such as these, Cohnheim concludes that it is not the peculiarities of the tumor which determine its benign or malignant course, but the condition of the organism. The physiological resistance of the neighbouring tissues must be abolished before a tumour can diffuse, and in the tissues of other organs before it can disseminate, *i. e.*, become infective. There are several sorts of dissemination. Of these the most frequent, but least pernicious, is along the lymphatics. In the lymph glands next to the tumor an analogous growth arises, then another gland of the same group is affected, then a third, producing a whole chain of cancerous lymph glands, which may extend for some distance. As a rule, the lymph vessels themselves remain unaffected, but in the stomach, intestines, and lungs, they are sometimes

involved. In another form the secondary masses do not involve the lymphatics, but cancerous tumors arise indifferently in organs which have neither a local, histogenetic, nor functional connection with the locality of the original tumor. The organs for which metastatic growths have the most decided preference are the liver and lungs; and there is only one tissue in which they do not occur, viz., cartilage. In all others—fat, bone, skin, muscle, kidneys, spleen, testicles, ovaries, pancreas, brain, fibrous and serous membranes, heart, uterus, mucous membranes, choroid and iris, secondary growths are met with. There appears to be no rule determining in which organ or tissue metastases shall occur. In a third series of cases, the dissemination through the lymph vessels is combined with genuine metastasis, the former preceding the latter for a longer or shorter period.

One of the most striking features in the dissemination of tumors is the fact that the secondary masses correspond exactly in histological and chemical composition with the original tumor. This conformity is so complete that it is often preferable to study the structure of a malignant growth in the metastasis than the original mass. There cannot be the shadow of a doubt that the secondary tumors arise on account of the existence of the primary one. From this conviction the theory has originated that an infectious material is produced at the site of the original tumor, which diffuses partly in the neighbourhood, partly through the lymph and blood to all parts of the body, causing the eruption of new but similar growths. The virus is supposed to be infectious only to the organism in which it is produced. The infecting agent must be either the juice of the tumor, or solid bodies, definite elements of the mass. Cohnheim inclines to the latter view. To make this plausible it is necessary to show, not only that tumor elements gain access to the lymph and blood channels, but also that when transported to other organs they develop and grow. The investigations of Koster have satisfactorily shown this in the case of lymphatics, and the growth of malignant tumors into veins is still more frequent. In the majority of cases of such tumors in which a careful inspection is made on this point, a vein is found the lumen of which is

occupied by a cancerous mass, either attached to the wall or extending as a fungoid-like excrescence. How many growths may penetrate first the small capillaries and veins? The possibility of the transportation of particles of a tumor by means of the lymph and blood streams, is beyond all question; indeed, emboli composed of such have been seen. Some believe that the cancerous embolus infects the wall of the vessel in which it lodges, and its elements produce the new growth; others hold that the cells of the embolus represent germs, which proceed in their development just as the original ones did. Cohnheim and Maas have shown in some beautiful experiments that tissue fragments, separated from their original base and lodged in the interior of a vessel, can grow and produce a new tissue. Bits of fresh periosteal tissue were put into the jugular veins of dogs and hens, and of course ultimately reached the branches of the pulmonary artery. The bits became vascular, just like a thrombus, vessels passing from the *vasa vasorum*, and within two weeks were produced first cartilage and then actual bone, and this without any participation of the vessel wall. This was not the only result. The newly formed bony plate not only never extended beyond the wall, but in the following weeks entirely disappeared; by the fourth week a small hard rudiment only remained, and by the fifth, no trace could be found.

The same effect follows the implanting of periosteal slips beneath the skin, and also the inoculation of cancer, which at first grows forcibly. It would appear that the physiological tissues of the organism oppose with an insuperable resistance the penetration of heterologous cell material, though it may possess, as shown by its early development, a power of active growth. As a direct sequence of this it follows that the tissue which permits of the penetration of tumor cells and their development, or the growth of the particles of a tumor which have been carried to it, does not comport itself physiologically. Let the tissue be histologically and chemically perfectly natural, still, there is absent from it that peculiarity described above as physiological resistance. This condition is not further defined, but the circumstances and states under which it may appear are

the following: inflammation, old age, hereditary, or, in some unknown way acquired, predisposition.

In the first place, Friedländer has shown that under the influence of inflammatory hyperæmia, new growths of epithelium very readily occur, often penetrating the altered connective tissue; thus, to give an example, in chronic sub-cutaneous abscesses he has found the epithelial cells of the rete mucosum and root sheaths of the hairs of the skin above the abscess penetrate the wall, and even form an epithelial coating on the granulating inner surface of the sac.

Of like significance are the much-discussed cases where, on the base of an old excoriation or lupoid ulcer, a cutaneous epithelioma has developed. It has already been stated that traumatism has no influence in the production and development of tumors, but Waldeyer has justly called attention to the frequency with which inflammatory alterations are found in the otherwise healthy tissues bordering on a cancer. Since the causes of these inflammatory processes may be very varied, the possibility of a traumatic influence cannot be entirely ignored, and it may, under certain circumstances, convert a benign into a malignant growth.

Of still greater significance in this respect is old age. Thirsch has laid stress upon this, and has shown that the entire connective tissues of the body atrophy at this period, and are therefore less able to withstand the penetration of the still active epithelial cells. Carcinoma almost always occurs after the 50th year, that is to say, epithelial tumors do not become malignant before this period. The weakness of the tissues, or the diminished power of physiological resistance, is one of the signs of general feebleness and old age.

There remains, however, a very considerable number of cases of malignant growths for which an explanation can neither be sought for in a previous inflammation nor advanced age. Cases of genuine cancer are not only met with in very young individuals, but the malignant sarcomas preponderate in childhood, while the malignant gliomas are almost peculiar to the first year of life. Upon what the abolition or decrease in the physiological

resistance in these cases depends is difficult to say. Possibly—even probably—heredity may play a part, but in many cases we do not know the causes of the tissue-weakness in question. This is the only point in the whole of the pathology of new growths where one is constrained to fall back upon an unknown and not definable *predisposition*. This theory no more recognizes a predisposition to a tumor than it does a predisposition to red hair or a crooked nose ; but for the explanation of the malignant course of certain tumors we cannot escape from the admission of a predisposition. What makes this particularly interesting, and proves at any rate that the predisposition is connected with the tissues alone, and not with the condition of the blood or nervous system, is the fact that it sometimes appears limited to certain organs and tissues. This appears to be the simplest explanation of those remarkable and not uncommon cases, in which the entire metastases are rigidly confined to a definite system, the skin, the skeleton, the intestines or the lymph glands, the affected system not having any local, or genetic or functional relation with the locality of the primary tumor.

The differences in the course of diverse malignant growths are explained in the peculiarities of locality and histological constitution of the primary tumors. The sarcomas possess an extraordinary power of growth, probably on account of their richness in cell elements and the highly embryonic nature of their components, and this explains the fact that when they disseminate, it is much more ferociously, so to speak, than cancers, and the metastases are not so often confined to the lymph glands. Sometimes they even overleap the glands in the neighbourhood, as Virchow remarked, and appear in distant ones. This is chiefly the case in the small-celled sarcomas, in which the cells might slip through the lymph spaces. The great frequency with which tumors of the abdominal viscera are accompanied with metastases in the liver, and nowhere else, speaks in the most positive manner for extension through the blood-vessels. In such cases there are probably genuine cancerous emboli, which are transported by the blood stream until vessels are met with too narrow to permit of their passage. In precisely the same way, the

secondary tumors in the lungs arise from malignant growths in various regions of the body, and it is a point worth noting that the metastases of the giant-celled sarcoma of bone are invariably in the lungs. If the cells or particles of tumors gaining access to the circulation, are so small that they can pass through all blood-vessels, then the laws of embolism do not apply, but they come under the same category as small particles of cinnober and bacteria masses. It may be, then, a matter of accident where they lodge, or more probably it depends on the rapidity of the blood current. The slower this is the more favorable are the conditions for lodgment and subsequent growth. On this ground it is that the bone marrow and the liver are the elected seats of tumor metastases in so many cases, no matter what the situation of the primary tumor may be. The lodgment and initial growth in the interior of a blood-vessel does not necessarily involve the production of a secondary tumor: This depends on whether the physiological resistance of the neighbouring tissues be present, and this factor may be of influence in determining the localization of metastases, *i. e.*, the seeds of a tumor may gain access in numbers to the blood, but only find in certain organs or tissues conditions for their further development, these conditions being an absence of the normal physiological resistance.

Note.—Space does not permit of the further consideration of Prof. Cohnheim's views on epithelioma and rodent ulcer, or the cancerous cachexia. The above theory may appear incomplete in many points, but it must be remembered that it is greatly condensed, often, I am afraid, at the expense of clearness. In the original it occupies 75 pages.

W O.

Reviews and Notices of Books.

Lectures on Localization of Diseases of the Brain.—Delivered at the Faculté de Médecine, Paris, 1875.—By J. M. CHARCOT, Professor in the Faculty of Medicine, Paris; Chief of the Salpêtrière Hospital, Member of the Académie de Médecine: of the Clinical Society of London: President of the Société Anatomique: former Vice-President of the Société de Biologie, &c., translated by EDWARD P. FOWLER, M.D. New York: WILLIAM WOOD & Co. 8vo. pp. 133.

The researches of Heitzig, Ferrier and others have of late years given a wonderful impulse to the interest taken in the study of cerebral disease. Striking and remarkable as are the results obtained by experiments upon animals practised with a view of determining the functions of different portions and areas of the encephalic mass, yet nothing can at all equal in certainty the information conveyed by careful study of the experiments performed for us on human subjects by various pathological conditions; Charcot strongly urges that no matter how plausibly we may argue by analogy from the monkey's brain to man's brain, yet nothing can be considered *proved* concerning the latter except it be based upon the undeniable evidence of the pathology on the human brain itself. This is undoubtedly the proper ground to take, and everything tending to increase the general knowledge of the profession concerning these conditions is a real advance in practical medicine. As the translator rightly says: "It is too late to introduce our distinguished author to the medical profession, for wherever medicine is taught as a science his works are already known and prized, and have been translated into nearly every modern language."

In these lectures will be found a short and concise exposition of the main points which it is absolutely necessary to know of the normal anatomy of the various structures of the brain as at present understood. This is the foundation of the whole, and in the condensed form in which it appears, would of itself be extremely useful; but to this in a late chapter is added the

result of the author's own observations, both clinical and pathological, of the effects produced by diseased conditions of these various parts. In most cases naturally his observations agree with those of others, but notable exceptions to these are found where he has been led to entertain views opposed to those of previous experimentors and clinical observers. Charcot's great reputation has been founded upon the minute care with which his observations has always been made, and the scrupulous exactness with which his results have been recorded. These lectures, therefore, which he presents, as embodying his deliberate views upon this now absorbing medical topic are to be gladly received in this country, and must be entertained as any work would be, commanding such eminent authorship.

As regards the translation, M. Charcot says in the preface, he considers it "a model, both of scrupulous exactitude in rendition of the original meaning, and a clear unexceptionable style of English."

The book is very neatly got up by the publishers, and is even profusely illustrated by very good cuts.

Lectures on Bright's Disease of the Kidneys; delivered at the School of Medicine of Paris.—By J. M. CHARCOT, Professor in the Faculty of Medicine of Paris: Physician to the Salpêtrière, &c., &c. Collected and published by Drs. Bourneville and Sevestre, editors of the *Progrès Médicale*, and translated with the permission of the author by HENRY B. MILLARD, M.D., A.M. New York: WILLIAM WOOD, & Co., 8vo. pp. 100.

Probably no disease has been rendered more complex and difficult than has Bright's Disease by many authors. This is chiefly owing to the immense numbers of pathological subdivisions which at various times have been made according to the standpoint from which the subject has been viewed. M. Charcot is not of these. He has followed exactly the opposite plan, and has endeavoured to simplify and condense as much as such a wide range would permit of; and one is surprised to find how thoroughly the ground has been covered in the small space of

only 100 pages. The first lectures are devoted to a brief consideration of what it is essential to understand of the normal anatomy and physiology of the kidney. Upon this follows a summary of the views of Bright's disease. The whole of the forms are reduced to three: the large white kidney, the contracted kidney, and the amyloid kidney. Sufficient space is devoted to the discussion of the etiology, pathology, and clinical features of each of these, and a chapter is added on Scarlatinal Nephritis. The author does not enter upon the subject of treatment at all, but claims, that a correct understanding of the management of these formidable cases can only be obtained by close study and careful observation of the different disease processes which occur in the separate forms.

We agree entirely with the Translator in saying that we "know no work which, with such conciseness and precision, presents the various characteristics of the important disease which is the subject of these lectures."

It is a very neat volume worthy of being highly recommended to the profession. Many wood-cuts assist the explanations of the text, and are supplemented by two full-page, well-executed colored lithographed plates.

Physiological Therapeutics: a new theory.—By THOMAS W. POOLE, M.D., M.C.P.S., Ont. Toronto: The Toronto News Company. New York: The American News Company. London: The International News Company, 1879. 8vo. pp. 232.

If Therapeutics is to be advanced it must be by such ways as the following: 1st. An enlarged knowledge of the natural history of diseases, so that cures due to nature may not be ascribed to medicines. 2nd. A greater clinical study of the actions of remedies in diseased states, so that these actions may be discriminated from those which take place in health from the same agents in the same doses. 3rd. Further discoveries as to the powers and effects of drugs in various amounts or modes of administration. 4th. A more minute investigation of all the results medicines cause, especially upon the quality of the

various excretions. And 5th. The finding of new remedies possessed of decided superiority over the old. We regret our author has not seen fit to enter upon any of these paths. Had he done so he might have conferred a lasting benefit on our science. He has contented himself with simply weaving "a new theory." His book is just such a one as might be spun by one who shut himself up in his study for a while with the works of others from which to cull the wherewithal. As far as we can see, he has not given the details of a single original experiment with medicines upon either animal or man. He has not recorded one observation of anything he has individually witnessed. And he makes no mention of his experience from the use of remedies in practice.

Nor are these the only charges we have against him. We think he has too much adapted the facts of others to his theory instead of his theory to their facts. Such a course may well lead to the most extravagant notions. It has often done so before. Under it even such an absurdity as the old idea of "signatures" was cast upon the world. The eye-bright flower from its likeness was then the alleged cure for every case of sore-eye. Our author's "new theory" is now the sure explanation of physiological Therapeutics.

We have not been able always to verify his references: *e. g.*, speaking of Aconite he says: "how amid such general paralysis as aconite induces, it could ever have been regarded as an excitor of any part of the nervous system," and refers to Ringer's Therapeutics, as if Dr. Ringer regarded it as such an excitor. In the edition of his work before us we find no allusion to anything of the sort. In speaking, too, of Veratrum, our Author would have it understood that Dr. R. attributes the muscular spasms and convulsions produced by poisonous doses of this agent to heightened reflex function of the spinal cord. In carefully reading his article, we find that he attributes them to an entirely different source, he says veratrum "kills the muscles," not the nerves. He certainly mentions it was thought veratrum excited the medulla oblongata and the spinal cord, but he takes care to state that this was thought to be so, not by himself, but by Kölliker.

We find, moreover, that our author is not always exact in his assertions. He states, *e. g.*, that “opium and morphia diminish arterial blood supply, and *arrest* the secretions *everywhere*.” The italics are ours.) Now how can we account for such a loose statement as this? We have actually found it contradicted in another page, where, quite uncsciously, he mentions the profuse sweating that may occur after the use of opium. How often are these medicines ordered as diaphoretics? Do they not in some cases of defective secretion of the urine increase the amount? Would even the veriest tyro maintain that they arrested or stopped the flow of tears, saliva, gastric juice, or secretions everywhere?”

While, again, we have found no allusion to many excellent treatises that have lately issued from the press on his subject, as Fothergill's, &c., there are for us too many quotations from “Hughes' Pharmacodynamics,” a notorious Homœopathic authority. Why draw support from him? Glonoine,—so far used only by infinitesimal practitioners,—is also fully treated.

Our readers will expect the “new theory” to be opposed to their old views. To present them with some conception of it, we must use the words of our young author, “Electricity is not a stimulus to nerve or muscle. On the contrary its action is that of a sedative, anæsthetic and paralyzer.” “Electricity produces muscular contractions, * * by paralyzing the motor nerves.” Ergot of Rye, “resembles the action of electricity, and we see no reason to doubt that its mode of action is similar also.” Narcotics as well as Ergot paralyse the nerves, and thereby cause convulsions and spasms of muscular fibres.” Many other medicines of course fall in with these. But the gist of the theory is that all medicines which cause increased contraction of muscular fibre anywhere do so by withdrawing nerve force from the nerve which supplies the fibre.

Our author heaps together in support, examples of paralysis, and convulsions, or increased contraction after doses of drugs. But he does not distinguish as he ought between sensory and motor paralysis; nor between primary convulsions and subsequent paralysis. Besides the *experimentum crucis* is wanting. He

might have cut the anterior column of the cord, or the motor nerve, and then judged whether "muscular contractions" followed. But he did not. And so we have to fall back upon those who have done so before him, and take our wisdom from them.

Apart from the peculiarities incident to the "new theory," the reader will find under the actions of the different medicines much that is worth knowing, compiled from reliable sources, and quite up to the present state of therapeutics. The more purely physiological parts, when not theorized, are sure to repay perusal. Trusting our young author may yet do much more to advance therapeutics, we leave him in the hope that when we next meet it may be in ways more practical.

Extracts from British and Foreign Journals.

Unless otherwise stated the translations are made specially for this Journal.

A Case of Gangrene of the Lung treated by Incision. — DR. CAYLEY, (Clinical Society of London) read notes of this case. The patient, a man, aged 40, was admitted into the Middlesex Hospital on December 30th, 1878. He had been ill five weeks with cough, spitting, and pain in the chest. During the last fourteen days, his breath, and expectoration had been foetid. On admission, he was in a condition of extreme prostration and emaciation, with great dyspnoea, and painful cough; with much difficulty he expectorated small quantities of horribly offensive brownish mucus. His breath had a similar odour. The physical signs were those of consolidation of the left base, but there were no distinct indications of a vomica, as a bubbling crepitation or cavernous or aphonic breathing. The absence of these signs was probably due to the cavity being full, and to its not communicating freely with the bronchus. An exploratory puncture was made with a fine trocar and cannula, and a few drops of pus with the same gangrenous odour as the expectoration were drawn off. The patient was now put under the influence of a mixture of ether and chloroform, and Mr. Lawson made an incision in the ninth intercostal space, in a line with the angle of the scapula, three

inches in length, and continued it until the cavity in the lung was reached. A gush of about five ounces of horribly foetid pus then took place, and with the pus several fragments of gangrenous lung tissue, the size of the end of a finger, came through the opening. A large-sized drainage tube was introduced, and the cavity was washed out twice daily with diluted Condly's fluid. The operation gave the patient great relief. He ceased to cough and to expectorate foetid mucus, and his breath lost that gangrenous odour, and the temperature, which before the operation had been very high, fell to normal. He did not, however, rally from the state of prostration, and gradually sank and died on January 4th; the operation having been performed on December 30th. For the first two days fragments of gangrenous lung were discharged, when the cavity was irrigated. On *post mortem* examination, the lower lobe of the lung was found consolidated by pneumonia, and firmly adherent to the chest wall. In its interior was a large irregular cavity, with ragged, in parts gangrenous, walls. Where most superficial it was upwards of an inch beneath the surface of the lung. There was a small obsolete tubercular cavity, with some puckered fibrous nodules in the apex of the right lung; and the kidneys were granular although the urine had not contained albumen. In this case the patient was so much reduced when he came under treatment that little hope of a successful result could be entertained. The operation, however, which was unattended either by danger or difficulty, gave complete relief to the most distressing symptoms, and by evacuating a quantity of putrefying matters which were pent up in the lung, and causing septicaemia, gave the only chance of recovery; and possibly, if the operation had been performed earlier, the sloughing portions of lung might have become completely detached, and the patient have rallied.

Dr. J. E. POLLOCK asked how long Dr. Cayley's patient had lived after the operation. [It was answered that five days elapsed before death took place.] The points of interest in these cases were—First, the question of diagnosis before the operation; secondly, the eligibility of each operation. In Dr. Williams' case the difficulty was to decide whether the case was one of pneu-

mothorax, or one of a cavity with thin walls. This was always a difficult question. It turned out that the patient was suffering from the former, yet, at the time of operation, Mr. Erichsen thought that he had passed through the lung before reaching the pus. He thought that if the dulness shifted with the position of the patient, this was a valuable sign of pneumothorax. He could not remember any case where a cavity was so large that the physical signs varied much after alteration of the patient's position, or after a profuse expectoration. After all, the question of diagnosis was, perhaps, not of vital importance. He thought that cavities in the apex, where there was a good communication with the bronchus, were certainly not suitable for operation; but where the cavity was low down, with a small external opening, and much decomposition, they should be treated by incision or by tapping. Dr. Cayley was to be congratulated on his boldness in carrying out the only method of treatment which was likely to prove successful.—Mr. MAUNDER had listened with much pleasure to the cases brought forward that night. He had for some time been of opinion that, no matter what the exact position of these foetid cavities might be, they should be treated by incision, just like abscesses in other parts. As soon as a free opening was established, decomposition was checked.—Dr. MAHOMED related a case of a child in Guy's Hospital, under the charge of Dr. Fagge, where a pneumonia was thought croupous at first, did not clear up, and gave signs of breaking up of the lung. He was anxious to treat the case by incision, thinking that it might be an abscess of the lung, following extensive catarrhal pneumonia, which would, if left, end in acute tuberculosis. But the evidence of a cavity was too doubtful to allow this course. The child eventually died from the cause he had feared, and a large cavity was found. He was anxious to know how an adherent pleura might be certainly recognised. In Dr. Cayley's case there seemed to him to have been old adhesions. He also wished to ask what Dr. Williams considered to be the nature of the bilious attacks he had described. Dr. SEDGWICK related a case he had seen many years before, which he had diagnosed to be an abscess of the lung. This, having

become foetid, gave rise to great constitutional illness ; but, after some delay, he thought he discovered a bulging in the seventh intercostal space, and here introduced a trocar. The result was very gratifying ; and the patient (his father) recovered, though extremely ill at the time. In the following winter the same trouble occurred in the same place, and required the same treatment, by which life was prolonged for several weeks.—Dr. DOUGLAS POWELL agreed with Dr. Pollock that the interest of these cases was, first, as to the diagnosis ; and, secondly, the best treatment for them. In a case now under his care, he had diagnosed a pyo-pneumothorax, because the sides were bulged and the intercostal space effaced. The shifting dulness described by Dr. Pollock he regarded as a valuable test ; as also the alteration of physical signs after profuse expectoration. It had been said that it did not matter much which condition was present ; but he thought that in empyema it was better to make an incision in the lowest available spot, while a cavity should be opened by a trocar over its middle. He would not touch apex-cavities ; but in those at the base it was very different, and here there was risk that the sputum would be inhaled into the other in the act of coughing. He would also allude to an old way of treating profusely secreting apex-cavities, which was, in his opinion, of great service ; namely, by blistering and the application of savine ointment.—Mr. H. MARSH said that for himself he always insisted on knowing at what point the physician wished the chest to be opened ; but he considered that it was generally advisable, when a low opening was needed, to make a preliminary incision over the most prominent point, and then make a counter-opening below.—Mr. HOWSE wished to draw attention to the trouble often caused by old adhesions of the pleura converting the pleural cavity into a network of sinuses. This had been frequently, in his experience, a source of difficulty ; and he thought here a second opening would often prove futile. As to tapping cases of gangrene of the lung, he was not inclined to recommend this procedure. He had seen three cases lately where the gangrene was very limited, and no surgical interference would have been possible.—Dr. GOODHART wished to ask Dr.

Cayley what importance he laid on the presence of foetor as an evidence of gangrene. He had not understood from the notes read that there had been distinct evidence of a cavity. In two cases under his care there was the same absence of distinct signs of cavity, though the foetor was great. One was, no doubt, an old empyema. Was it not also true that these patients often went on a long time without getting worse. Mr. G. BIRD always trusted to a double opening with a drainage tube between them, and insisted on this as a point of importance. If this course were impracticable, he trusted to a considerable slit rather than a single puncture.—Mr. MARSH asked how far it was safe to inject such cavities with iodine. In one which he had so treated, and where there proved to be a communication with bronchus, the patient nearly died from asphyxia. Dr. BRISTOWE remarked that it was clear there was great difficulty in distinguishing between a cavity and a pyo-pneumothorax; but he thought the treatment of both should be the same. With reference to the value of shifting dulness that Dr. Pollock had insisted on, he mentioned a case of abscess of the lung where the cavity was very large, quite large enough to have proved misleading in this respect. The recognition of elastic fibres in the sputum was often a fallacious indication, of which he related a case in point. For his part he trusted greatly in antiseptics to the treatment of these cases.—Dr. WILLIAMS in his reply, explained that in the recognition of adherent pleura, he trusted to the old rules of retraction of the intercostal spaces, etc., and explained what was meant by the bilious attacks in his patient.—Dr. CAYLEY, in answer to Dr. Goodhart, said that he had taken the precaution to puncture with the aspirator before tapping.—*British Medical Journal*.

Case of Stricture of the Rectum, treated by Incision of Stricture.—(By D. Lowson, M.D.)—Mrs. S.—, aged thirty-four, had complained for eight years of symptoms of stricture of the rectum; and though during that period she had been frequently under medical treatment, and had derived considerable relief, yet the improvement lasted only a short time, and about two years ago she was

suffering more than at any previous period. The motions, which had been narrowed for years, had become much more difficult to pass, and defecation could not be effected without severe straining and considerable pain, and was often accompanied with blood and matter. Hardened masses were felt along the whole course of the colon as far as the cæcum, disappearing after laxatives and the free use of the enema, and again collecting soon after the discontinuance of these measures. The stricture itself was felt about two inches above the anus, was hard and annular, and at some points ulcerated. It was movable on the coccyx behind, as well as on the vagina in front, and just fitting the tip of the finger, it could be pushed upwards and drawn downwards freely within the surrounding structures. The symptoms all pointed to a case of simple stricture. There was no great irregularity of surface, and after an existence of eight years, only a small extent of bowel was affected. There was no excessive fetid discharge as is the case in most syphilitic or cancerous strictures; and, in addition, the patient was not suffering constitutionally, the appetite and general health being good.

Finding that in the course of former treatment dilatation had not been resorted to, and having first cleared away the masses of scybala filling up the large intestine, a process which I found considerably dilated the stricture, I gradually completed the dilatation by bougie. She was for the time relieved, but a month afterwards I found the stricture as before. The bougie was again resorted to, but the irritation caused by it became so great that its use had to be discontinued. Mild laxatives and frequent emollient enemata soothed and relieved the irritated bowel, but dilatation could not again be borne, and the symptom of stricture became aggravated.

For twelve months the patient had been under treatment without any marked improvement in the condition of the stricture, and she now became very anxious to have something done for her permanent relief. Dilatation having proved unsuccessful, the idea of colotomy presented itself, but under the circumstances it seemed rather an extreme measure; and excision of the lower part of the rectum, although strongly advocated by high authori-

ties for cancer, has the disadvantage of destroying largely or entirely the action of the sphincters. The removal of the stricture alone seemed the most feasible operation, for by cutting out the narrowed ring, and stitching together two pieces of bowel which were healthy and had sustained no loss of substance in their circumference by the ulcerative process, a union might be expected free from contraction; and approaching the rectum from behind by an incision extending from a little behind the anus to the tip of the coccyx, and by keeping as near as possible the mesial line, so as to run parallel with the fibres and divide into halves that part of the external sphincter which lies between the anus and coccyx, its action would not be ultimately interfered with, and the internal sphincter would be preserved entire. Mr. Jessop of Leeds, who saw and examined the case minutely, considered it a very favorable one for operation, as did also Mr. Knaggs of Huddersfield. Accordingly, on the 5th of December, 1877, having cut down in the mesial line in the interval between the coccyx and the lower end of the bowel, I divided the posterior part of the external sphincter as much as possible into two lateral halves, and turning these aside with the intermingling fibres of the levator ani, I introduced the finger inside the rectum, and pushing it firmly into the stricture I pulled it down from its situation in front of the coccyx, and made it project backward through the external wound. Reaching the wall of the rectum, and having dissected the surrounding stricture from the lateral aspects as far forwards as the recto-vaginal septum, I cut the bowel through above and below the stricture, dissected the ring off the posterior vaginal wall, and stitched the two pieces of bowel together with catgut sutures. Two small vessels spouted, but did not require ligature.

After the operation the temperature gradually rose, reaching its maximum— 102° —on the evening of the third day, and falling again, became normal two days after. The pulse corresponded with the temperature, being 120 the third day after the operation. The catheter had to be used for a fortnight. There was never any abdominal tenderness nor other symptom of peritonitis. The vaginal pipe of an ordinary Higginson's enema was intro-

duced into the rectum on the conclusion of the operation, and the bowels were kept confined for five days. After this, however, diarrhoea came on, and the management of the wound became difficult. A small-sized Ferguson's speculum was introduced in place of the vaginal pipe, and through this the bowel was cleansed. The stools now became liquid and very irritating, were mixed with smooth scybala, and came away partly by the tube, but also by the wound, excoriating the integument in its vicinity. Opium had to be prescribed freely on account of the pain, and yet the nights were restless and the appetite became poor.

About three weeks after the operation the lower fragment of bowel gave way behind, probably from the continued pressure of the speculum, and immediately all the symptoms began to improve. There was now no pain except when the bowels were moved; there was considerable retentive power except when the bowels were relaxed; the discharge became less irritating; the excoriations healed; and the blue line began to appear at the margin of the wound.

March 9th, 1878.—The condition of Mrs. S——, has greatly improved. The bowels now act regularly; there is neither pain nor straining at stool; the motions are natural in size, but flattened; and the sphincter is good except when the bowels are relaxed, when she finds retention is not as good as formerly.

March 31st, 1879.—A considerable amount of cicatrisal stricture has formed around the seat of the operation, and some contraction has taken place, but a medium-sized bougie passes easily, and the motions without difficulty. The symptom complained of most is "painful sitting." To sit comfortable she is obliged to lean well forward, or inclined to one side in a semi-recumbent position. Except during an attack of diarrhoea, which she is sometimes subject to, her sphincter power is perfect.

The great difficulty in the case was the after-treatment. The passage of faecal matter of a very irritating nature over the wound, and the tendency to diarrhoea common to most rectal operations, retarded the healing process, which seemed also to be delayed by the action of the internal sphincter, just as in the cases of fistula. There are few strictures situated so low down as to come within the range of the foregoing operation; but in cases of the sort I think that it might be advisable to perform colotomy in the first instance, and so to carry off the faecal matter by the loin; then, after an interval, the stricture in the rectum might be removed, and a good union secured, and subsequently the artificial anus closed and the motions allowed to pass off by their former channel.—*The Lancet.*

The influence of Constitutional Syphilis upon the Course of Wounds.—

Dr. DUSTERHOFF states that the contiguous forms of syphilis do not generally exert any influence upon the course of traumatic lesions. A wound subjected to constant irritation during the period of contagion may become the seat of syphilitic efflorescences, without its healing being sensibly retarded. Persistent irritation of a wound, bad diet, and excessive antisyphilitic treatment generally retard the cure more than constitutional syphilis itself. Wounds in the neighbourhood of a primary induration may heal by first intention. Latent syphilis is ordinarily without influence upon the course of a wound. A surgical operation successfully performed in a case of latent syphilis may be followed after cicatrization by syphilitic manifestations in the position or not of the wound. Autoplastic operations performed on the syphilitic parts often fail, especially if an incomplete course of treatment adopted shortly before the operation has caused the disease to become latent. In this case syphilis appears spontaneously at the seat of the operation. Every subject of syphilitic ganglia ought to be submitted to a course of antisyphilitic treatment before undergoing an autoplastic operation. Tertiary syphilis in a progressive state renders the patient an unfavourable subject for effecting a cure. This is not the case, however, if the patient is passing through a retrogressive stage, or is entirely cured. Syphilis in the bones predisposes to fractures and hinders consolidation. Treatment by mercury does not prevent induration, but rather assists it. In cases of inveterate syphilis, more especially in syphilis of the bones wounds are sometimes accompanied by a specific gangrene, which cannot be arrested by any antisyphilitic treatment. There is no reason for supposing that constitutional syphilis predisposes to hæmorrhage from the wounds. Lastly, there is no relation between constitutional syphilis and pyæmia. The above results were obtained more especially with a view to the consideration of the influence of constitutional syphilis upon the course of wounds received upon the field of battle. (*Arch. de Langenbeck*, Bd. xxii. hft. 4, and *Arch. Gen. de Med.*, Feb. 1879.)—*The Practitioner*.

CANADA

Medical and Surgical Journal.

MONTREAL, APRIL, 1879.

MCGILL UNIVERSITY.

PROCEEDINGS OF CONVOCATION, M.D., 31st MARCH, 1879.

Long before the hour fixed for this ceremony the William Molson Hall of the University was filled with students and their friends. Shortly after three o'clock the members of Convocation entered the Hall and the Chancellor assumed the chair.

The proceedings were opened with prayer by Archdeacon Leach.

A large number of the Governors and Professors of the different Faculties were present.

Dr. Scott, in the absence of the Dean of the Medical Faculty, Prof. G. W. Campbell, read the following report of the Medical Faculty for the first Session.

The total number of students enregistered in this Faculty during the past year was 166, of whom there were, from

Ontario,	87.	New Brunswick,	7.
Quebec,	53.	P. E. Island,	3.
Nova Scotia,	5.	Newfoundland,	1.
		United States,	14.

The following gentlemen, 40 in number, have passed their Primary Examinations on the following subjects: Anatomy, Chemistry, Materia Medica and Pharmacy, Institutes of Medi-

cine and Botany and Zoology. Their names, and residences are as follows :

Ayer, N.	Woodstock, N.B.	McDonald, M. C	Montreal, Q.
Brown, T. L.	Ottawa, O.	McDonald, J. A.	Panmure, P.E.I.
Beer, Chas. N.,	Charlottetown, P.E.I.	McDonald, R. T.	Montreal, Q.
Cameron, P.	Williamstown, O.	Mackenzie, K.	Melbourne, Q.
Church F. W.	Aylmer, Q.	Mackenzie, B. E., B. A. .	Aurora, O.
Cahalan, J.	Wyandotte, Mich.	McLaren, D. C. B. A. .	Montreal, Q.
Cowley, D. K.	Ottawa, O.	McGannon, E. A.	Prescott, O.
Dibblee, G. O.	St. Stephens, N.B.	O'Calaghan, T. A. B.A.	Worcester, M.
Edwards, J. S.	London, O.	Pringle, A. F.	Cornwall, O.
Fielde, E. C.	Prescott, O.	Pulford, F. W.	Detroit, Mich.
Fraser, H. D.	Pembroke, O.	Ross, G. T.	Montreal, Q.
Gray, W. L.	Pembroke, O.	Ross, J. W.	Winthrop, O.
Heyd, H. E.	Brantford, O.	Ruttan, A. M.	Napance, O.
Higginson, H. A.	L'Original, O.	Riordan, B. L.	Port Hope, O.
Henderson, A.	Montreal, Q.	Rogers, E. J.	Peterboro, O.
Josephs, G. E.	Pembroke, O.	Stewart, J.	St. Anicet, Q.
Laurin, E. J.	Montreal, Q.	Stervis, F. W.	Iroquois, Q.
Lang, W. A.	St. Marys, O.	Smith, E. H.	Montreal, Q.
Maas, R. L.	Negaunee, Mich.	Snow, W. H.	Dundas, O.
Mignault, L. D. B.A. .	Montreal, Q.	Struthers, R. B.	Phillipsburg, O.

W. C. Perks, Port Hope, has passed the written, but owing to illness was unable to present himself for the oral examination.

The following gentlemen, 37 in number, have fulfilled all the requirements to entitle them to the degree of M.D., C.M., from this University. These exercises consist in examinations both written and oral on the following subjects: Principles and Practice of Surgery, Theory and Practice of Medicine, Obstetrics and Diseases of Women and Children, Medical Jurisprudence and Hygiene, — and also Clinical Examinations in Medicine and Surgery conducted at the bedside in the Hospital.

Brown, J. L.	Chesterfield, O.	Lloyd, Hoys W.	Strathory, O.
Burwash, Henry J.	St. Andrew's, Q.	Lloyd, Chas. C.	Roscoe, Ill.
Butler, Billa F.	Stirling, O.	McArthur, John A. .	Underwood, O.
Carman, Philip E.	Iroquois, O.	McCully, Oscar J. M.A.	Sussex, N.B.
Carman, John B.	Iroquois, O.	McCullough, George.	St. Marys, O.
Chisholm, M.	Rich Lomond, N. S.	McGuigan, William J. .	Stratford, O.
Case, William.	Hamilton, O.	McNee, Stuart.	Perth, O.
Gray, Thomas.	Brucefield, O.	Menzies, John B.	Almonte, O.
Groves, George H.	Carp, O.	Riley, Oscar H.	Franklin, Vt.
Gurd, David F.	Montreal, Q.	Rutherford, M. C.	Washington, N.Y.
Hart, Geo. C.	Osnabrook Centre, O.	Scott, John J.	Ottawa, O.
Hanna, Franklin.	Harlem, O.	Seymour, Maurice M.	Chesterville, O.
Henwood, Alfred J.	Brantford, O.	Shaw, William F.	Ottawa, O.
Imrie, Andrew W.	Spencerville, O.	Smith, John.	Torbolton, O.
Irwin, J. L.	Montreal, Q.	Spencer, Richmond. . .	Montreal, Q.
Jackson, Joseph A. .	Lawrence, N.Y.	Sutherland, William B.	Montreal, Q.
Jamieson, Chas. J.	Ottawa, O.	Weagant, Clarence A. . .	Dundas, O.
Lawford, John B.	Montreal, Q.	Williston, H., M.A.	Newcastle, N. B.
Lefebvre, John M.	Toronto, O.		

Frank Buller, M.D., M.R.C.S. Eng., Lecturer on Diseases of the Eye and Ear, receives the degree in course, with *pro-forma* examination.

Of the above named gentlemen, Mr. J. B. Lawford is under age. He has, however, passed all the examinations and fulfilled all the requirements necessary for graduation, and only awaits his majority to receive his degree.

The following gentlemen have passed in Anatomy :—

W. Cormack,	J. H. Carson,	F. Tupper,
G. H. Oliver,	F. H. Mewburn,	W. A. Derby,
W. J. Musgrove,	C. M. Gordon,	G. C. Wagner,
M. McNulty,	A. P. Poaps,	J. C. Shanks,

The following gentlemen have passed in Materia Medica :—

W. Cormack,	H. Lunam, B. A.,	W. Shufelt,
M. McNulty,	W. Moore,	J. C. Shanks,
* A. Dunlop,	A. McDonald,	J. Williams,
* J. J. Hunt,	T. W. Reynolds,	J. B. Harvie,
		T. A. Page,

The following gentlemen have passed in Chemistry :—

A. P. Poaps,	A. H. Dunlop,	J. B. Harvie,
W. Cormack,	W. T. Derby,	W. A. Shufelt,
A. McDonald,	T. W. Reynolds,	J. C. Shanks,
A. D. Struthers,	J. Williams,	G. C. Wagner,
J. McKay,	J. J. Hunt,	F. H. Mewburn,
C. M. Gordon,	H. Lunam, B. A.	W. Moore,
James Ross, B. A.	B. H. Klock,	T. A. Page,
B. Fritz.	J. H. Carson,	

The following gentlemen have passed in Physiology :—

W. Cormack,	A. D. Struthers,	J. H. Carson,
H. E. Poole,	W. A. Shufelt,	E. Fritz,
W. J. Musgrove,	C. M. Gordon,	R. H. Klock,
A. McDonald,	G. C. Wagner,	A. H. Dunlop,
F. H. Mewburn,	T. W. Reynolds,	W. C. McGillis,
W. Moore,	J. J. Hunt,	

The following gentlemen have passed in Practical Anatomy :—

W. A. Shufelt,	F. H. Mewburn,	W. A. Derby,
F. Tupper,	J. C. Shanks,	E. Fritz,
C. M. Gordon,	J. H. Carson,	

Students who have passed in Botany :—

CLASS I.

H. V. Ogden, B.A. (prize). Alex. Shaw,	T. N. McLean,
G. W. Cameron, } equal. James A. Trueman,	E. J. C. Carter,
F. A. Holmes, } 2nd pr. Philius Vanier,	H. Gale,

CLASS II.

B. W. Burland,	Edmund Christie,	John Graham,
Henry O'Keele,	T. J. Pierce O'Brien,	W. H. Shaver,
W. T. Duncan,	E. C. Bangs,	John M. Scott,
B. F. W. Hurdman,	W. A. Dewolf Smith,	T. L. Martin,
J. H. Edick,	J. H. Shaver,	

CLASS III.

W. E. Thompson,	N. J. Hinkley,	R. F. Campbell,
J. B. Green,	C. B. H. Harvey,	George Shradly,
B. D. Pierce,	C. H. Ormond,	Albert Cuthbert.
A. McK. Catenach,	W. W. Denyer,	

MEDAL AND PRIZES.

The Medical Faculty Prizes are four in number :

1st. The Holmes Gold Medal, awarded to the student of the graduating class who receives the highest aggregate number of marks for the best examinations, written and oral, in both Primary and Final branches.

2nd. A prize in books awarded for the best examination, written and oral, in the final branches. The gold medallist is not permitted to complete for this prize.

3rd. A prize in books awarded for the best examination, written and oral, in the primary branches.

4th. The Sutherland Gold Metal awarded for the best examination in Theoretical and Practical Chemistry, with creditable passing in the Primary branches.

The Holmes Gold Medal was awarded to John B. Lawford, of Montreal.

The prize for the Final Examination was awarded to A. W. Imrie, Spencerville, Ont.

The prize for the Primary Examination was awarded to John Andrew McDonald, Panmure, P.E.I.

The Sutherland Medal was awarded to W. I. Gray, Pembroke, Ont.

The following gentlemen arranged in the order of merit, deserve honourable mention : —In the Final Examination, Messrs. Shaw, Gray, Sutherland and Williston.

In the Primary Examination, Messrs. Josephs, W. L. Gray, J. W. Ross, Beer, Rogers, Henderson, R. B. Struthers and Heyd.

PROFESSORS' PRIZES.

BOTANY, - H. V. Ogden, B. A. St. Catherines, O.

PRACTICAL ANATOMY.—Demonstrator's Prize, in the Senior Class, awarded to Chas. N. Beer, of Charlottetown, P.E.I.

Junior Class prize awarded to James Ross, B. A. Dewitville, Q.

The *Sponsis Academica* was administered by Prof. Osler, and the degree of M.D., C.M., conferred by the Vice-Principal, J. W. Dawson. The Chancellor then called on Dr. Oscar J. McCully to deliver the valedictory on the part of the graduating class. That gentleman spoke as follows:—

What a mysterious double-faced picture this life of ours is? How strange it is that when we are the most elated, when all about us appears bright and happy, we have only to stop and think to recollect that somewhere hangs that hideous skeleton. Again, when deserted and despondent, when the world looks cold and drear, we have only to look to see the silvery lining of the dark cloud. Often, in a storm, as the clouds, gloomily settling down, have encircled the mountain-top,

"And storm rolled in masses dark and swelling,
As proud to be the thunder's dwelling,"

And as the winds, let loose from their prison-tower have leaped forth in nimble, tumultuous glee, and as the God of the storm has rolled in chariot along the vault of heaven above us, his apparel as black as night. But above all this tumult how carelessly lies the fleecy cloud, "sleeping in bright tranquility," while the sunshine reflected from the sparkling ice-capped peak, dances upon its snowy bosom in serenity and peace.

And so with us to-day; our hearts are sad within as we look at the dark side of our meeting together, cheered as they look at the more hopeful and pleasing side. True, we do rejoice that we have received, at the hands of our Alma Mater, the highest honor she can confer; we feel a certain degree of self-satisfaction that we have at last accomplished that which we have been striving to do during our college course. But this is only one side of the picture. Our college life is at an end, and as we who are met here to-day as professors and students know

full well that we shall all never meet again. And we who have associated with each other for four years, with our wonted freedom from care, must part perhaps forever. Our songs, our merry-makings are at an end. Friendship made agreeable by a community of interest, cemented by the fact that we have the same trials, the same troubles, the same triumphs must be broken. Let us not say broken, for though separated far from each other let friendship's ties still remain intact. To-day we are sent adrift upon the cold world, the responsibilities of the profession we have chosen thrown fully upon us. Now we must fight the battle alone, with no more practised hand to guide, no sager head to direct our steps. If we had mastered medical science in all its depth and breadth perhaps we would be happy to-day. But if we ever thought we could so master it in a college course, we must be surely undeceived by this time. No, we have simply entered the vestibule, the mighty structure with its airy windings, its unexplored passages, with all its vastness and grandeur, lies unexplored before us, and it remains for us, by a life of unceasing toil and unremitting energy, to grope our way out, or be lost in its perpetual gloom. We have looked forward to this occasion with the most pleasing expectation, and have thought that when we attained the goal of our college life, we would be happy indeed. It has come at last, but it appears to have lost all the sweetness in the possession, and all the charm now lies in the retrospect. We, like fellow-travellers, have been toiling up a mountain side and on our way have met many difficulties. We have complained of the rough boulders over which we have had to climb, of our winding path blocked by the fallen oak, interrupted by the rushing stream and dark ravine that almost threatened us with ruin. Then we could see nothing of beauty about us, all was toil and disappointment. But the summit gained, we cast our eyes over the green valley below, with its winding silvery brooks down the mountain side, with its green foliage, and its rocks standing out as black knights, guardians of a foreign land, and disdain has lent "an enchantment to the view," and all is beautiful. So with us in our college life, we have thought it hard

that we were compelled to learn things as foreign to our profession as the hieroglyphics of Egypt, forsooth though censured with the fact that was all for the attainment of a good memory—such an essential to a medical man. We have thought it hard that we have had to take down lectures word for word, then to learn them by heart and repeat them *verbatim* at our examination. We have thought it hard when we could only catch a word now and then, and then be expected to fill up the missing links in our notes, and to pass creditable examinations upon them. But now that we have toiled through all these troubles they appear the most pleasant incidents in our sojourn here. And there is no doubt but that in after years, amid the cares and responsibilities of the profession we have chosen, we shall look back upon the picture of our life here, and all the defects that mar its beauty will be blotted out, and only the beautiful and charming will stand out in bold relief, and no doubt we will come to the conclusion that our professors knew far better what was good for us than we impudent students did ourselves. Then we will wonder we were so hard to please, and amid our inevitable troubles we will long for the good old college days gone by. We shall long to see the old halls, to see the old college grounds, where so often in merry sport we forgot the worry and vexation of studies to see the smiling faces of our old companions, to enjoy once again the gallop and game of college life. To our fellow-students, whom we leave behind us, we bid an affectionate farewell. It is not our place to offer you advice, you need no defence, for the position you occupy as medical students, and you shall be spared a senseless eulogy at our hands. And as we leave you we cannot do better than express a hope which I know finds a warm response in the hearts of my fellow-graduates and of every student connected with McGill Medical College, that during your stay you may see the greatest curse under our college labors swept away. I need not name it, for every sensible student and professor must know full well what it is. Often as we have bent over those ill constructed forms, and have attempted to pen all the words of wisdom as they fell from some professor, trying to say so much

in so long a time, and then, wearied with this mere mechanical act, have spent our night trying to decipher what we had written, (at last having given it up in despair and disgust) we have come to doubt that we were living in the enlightenment of the nineteenth century, but to think that we were groping in the darkness of the middle ages, long before the printing press had been invented. If our notes are to be the main source of our knowledge why impose upon us poor unoffending wretches such terrible drudgery, and why rob the professor of his time to instruct and explain. Why! and echo, with a bitter mocking voice, sends back the answer, why! why!! We do not hesitate to venture the assertion that one-half of the labor spent by the student in medicine in McGill is worse than wasted in unnecessary note-taking; and if that in our case had been spent in study upon the clearly printed page, and the professors had spent time in demonstration and examination, what prodigies we new-pledged doctors of to-day would be. Gentlemen, in the interest of our Alma Mater, which we wish well from the depths of our inmost soul, and against which we would shun to say a word which would detract from her usefulness or infringe upon her dignity, we wish you this much needed reform.

To our professors, who, during our course, often at the expense of health and the duties of their profession, have devoted themselves to the task of instructing us in the profession we have chosen, we return our sincere thanks. We shall not detain you with the usual enumeration of your many virtues which falls to the lot of the valedictorian, but shall say that you have ample reward in the knowledge of a noble work well done. Your influence has not been confined to the round of your daily cares, but has been, and shall be felt in thousands of homes throughout the Dominion, and throughout the world; and you must have the highest sense of happiness in knowing that you have exerted this mighty influence for the best, and we have only to lament that we are not better exponents of your teaching. We may be pardoned here if we seek a personal digression. There are departments in McGill which, under the able administration of those who have them in charge, have been brought, within the last few years, almost to perfection. The professors

who have these in charge may have the satisfaction of knowing that their efforts were appreciated by the students now leaving them. We refer to the departments of Hospital Clinics and Practical Anatomy, and make bold to say that whatever may be the faults of McGill in other particulars, at least in these she can challenge competition with any teaching body in medicine throughout the world.

To the ladies, the vision of whose smile and genial presence here to-day has been an incentive to the discharge of our duty throughout our college course, we return our sincerest thanks for the honor done us by being with us to-day. We make bold to address you as the major partners in our profession. When those who boast themselves as being the most manly and strong fails, woman, with a heroism, has still been true to her part, as the deserted streets of our pestilence-stricken cities, the bloody field and the crowded wards of our hospitals bear ample witness. And we must admit that her sympathy, her unremitting devotion has done more in restoring health than the fulfilling of our directions or the administration of our nauseous medicine.

The science and practice of medicine needs no defence at our hands. We pride ourselves on having chosen one of the most philanthropic of professions. True, it is. To stand beside the bed of the aged invalid and smooth his pillow for his inevitable grave, to stay the hand of death from laying his rude hold upon the young, the beautiful, and the strong; and to assuage human suffering wherever we may find it, stirs to life the noblest impulses of the soul. But there is a nobler and higher aspect of our profession than even this, which lies in the power and duty of the medical man—to educate the people how to prevent disease. The world, with all its boasted culture and improvement, is not perfect yet. And is it not strange that to-day we do not understand nor practice sanitary science and practical hygiene as well as did the ancient Romans and Greeks; and in our chase after phantoms which too often renovate we have neglected the cultivation of that, independent of which we cannot be a great and happy people. The masses are not alive to the mighty preventatives, to discover which they have in the

strict observance of the laws of health, and in the improvement of their sanitary surroundings. Let us then, as true medical men, make war upon the conditions producing disease, until we have a correct public opinion and proper legislation upon these matters which heretofore have been shamefully neglected. We now who are about to play our parts in the drama of life, and as we enter upon the practice of our profession let it not be in the narrow spirit of any one particular school, although we may be called by the name of the oldest and most scientific, but if there is any good in other schools let us not despise it simply because it is called by a name objectionable to us. Let us seek faithfully for the truth, and finding it where we may, let us put it into practice. Let ours be the broad school of doing everything we can to alleviate suffering and better mankind. Let us, proud of a profession as noble as it is responsible; proud of a University which we delight to call our Alma Mater, whose very life-blood now pulses in our veins, stimulating us to actions worthy of her, and whose honor and integrity we shall ever attempt to maintain; proud of a country vast in its area, boundless in its resources, great in the present but still greater and grander in the glorious future still lying before it; let us go forth with God o'er head and heart within to discharge our duties to our fellows faithfully and manfully. And at last when we have fully played our part, though the voices may not tremble to the death of one who has waded through slaughter to a throne, though we be not borne in solemn state through the long drawn aisle and fretted vault, we may be paid the humble thought, no less enviable tribute of the grateful tears of those who will say that the world has been the better for us having lived in it. Now we say to professors, our fellow-students and to the kind friends who have honored us with their presence, farewell. A word that must be and hath been; a sound which makes us linger; yet, farewell. We cannot do better as we say these sad words than apply to ourselves the closing lines of *Thanatopsis*:

“So live that when thy summons comes to join
The innumerable caravan that moves
To that mysterious realm, where each shall take
His chamber in the silent halls of death,
Thou go not like the quarry slave at night
Scourged to his dungeon, but sustained and soothed
By an unfaltering trust, approach thy grave
Like one who wraps the drapery of his couch
About him, and lies down to pleasant dreams.”