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QUEEN'S MEDICAL QUARTERLY.

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QUEEN'S MEDICAL QUARTERLY is presented to the Medical Profession with the compliments of Queen's Medical Faculty. Contributions will be gladly received from members of the Profession and willingly published.

BUSINESS MANAGER: W. T. CONNELL, M.D.

This number is issued under the supervision of Dr. Jas. Third.

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EDITORIAL.

RESPONSIBILITY.

WITH the opening of another session the problem of how best to direct the mental energies of the average student, during his course of study, comes up anew and with additional claims. The problem is no mean one. It concerns, primarily of course, the students and the college, but to an ever-increasing extent the very life of the nation itself. As the student is, so will the practitioner be. This is as true as the immortal line it paraphrases. The student with slovenly methods becomes the careless, indifferent practitioner—a creature that is a menace to the well-being of any community.

The "Seer of Chelsea" once remarked that "the knowledge which a people possesses of the art of healing is the measure of its refinement and civilization." Has this standard been maintained, and what are we doing to maintain it? Let each answer for himself.

New problems confront us at every turn. The college cannot anticipate all of these. The best it can do is to lay a sure foundation, without which even the most substantial-looking superstructure bends to every vagrant wind. Just now the profession is face to face with a number of really important problems. Let us refer to one of these. The mad rush for

wealth by men, ay, and women too, is responsible for the creation of conditions of life, the very tendency of which is to undermine the mental status of the individual, and thereby of the nation.

Nervous energy is everywhere taxed to its uttermost. Already the capital is gone, we are borrowing, and at a high rate of usury. The practice which this high-pressure civilization prompts of taking stimulants of various kinds during the day, in order that the round of duty may be performed, and then when night draws on of goading the tired and jaded system into sleep with a potion of bromide, cannot long be continued and the mental status of the nation be preserved and respected. This is no idle dream. The neurasthenics are not drawn, as a rule, from the humbler walks of life. If they were, perhaps our fears would have less in foundation.

We are inclined to forget amid the rapid development of material interests in this country the true secret of a nation's life. The measure of a community's or a nation's value to the world lies not in its great wheat belt, nor in its rich mines, however important these may be, but in its "moral and intellectual standards which alone are imperishable." Still we are not inclined to despair. An evil, once pointed out, is half-remedied. How important, however, that the education of the student should be conducted on broad general lines. Too often, we fear, a medical education has consisted in a mere accumulation of isolated facts, induction not encouraged, speculation utterly tabooed. A modest degree of speculation, so long as it is subordinated to the ever-increasing facts of physiology and pathology, can be productive of nothing but good, and who will deny that it lends warmth and interest to the work. An accumulation of facts, however important, does not constitute a knowledge of medicine, but finds rather its chiefest value in supplying data—data from which may be drawn broad general principles, and these principles must form the fundamental structure—the warp and the woof—of our science and our art.

The college cannot supply the gray matter, but it can supply the atmosphere best calculated to the development of thought; it can create what Locke calls a "relish of know-

ledge"; it can and should stimulate the student to lay down for himself from his own observations, from his own accumulation of facts, broad basic principles. The teacher's responsibility is great. He must, in a word, teach the best that is known in the world on the subject he professes. Nothing less will do. Nothing less can satisfy. He must cherish high ideals. Neither he nor his students may reach them, but there is joy, and profit too, in the effort, even though the goal is never reached.

The element of personal influence plays an important rôle in all true educational systems. John Henry Newman* beautifully expresses this idea in the following lines:— "I say, then, that the personal influence of the teacher is able in some sort to dispense with academical system, but that system cannot in any way dispense with personal influence. With influence there is life, without it there is none; if influence is deprived of its true position, it will not by those means be got rid of, it will only break out irregularly, dangerously. An academical system without the personal influence of teachers upon pupils is an Arctic winter; it will create an ice-bound petrified cast-iron university, and nothing else."

Many of the most valuable lessons the student learns find no place in the college curriculum. The living message drops into fertile soil—the half-hearted falls by the wayside—all others are frothy and evanescent and never reach the soil at all. Briefly stated, the bounden duty of the college is to turn out, first, MEN, and, secondly, men who can OBSERVE and THINK.

THOSE who know Dr. Ryan best will not question the wisdom of the Ontario Government in appointing him to succeed Dr. Clarke as Superintendent of Rockwood Asylum. In his new field of course he has to prove his spurs. He has been accustomed, however, to take a broad view of things generally, and this he will no doubt carry into his work at Rockwood. He is free from fads and fancies. He will not be snatching an ovary here or a uterus there in the vain hope of curing some obscure pathologic change in the cortical matter.

**Historical Sketches.*

Rockwood has always turned a deaf ear to all such teaching. This is important. The community must feel that in sending their afflicted ones to an asylum their treatment is not only humane, but the best that is known in the world. In Dr. Ryan the profession of Eastern Ontario have confidence.

IN Scotland there is a scheme on foot known as "University Reform," its aim being to establish a three-term session instead of the winter and summer sessions as at present. Under the proposed change there would be about eleven months devoted to study in each year.

Prior to the Carnegie gift it was absolutely necessary to continue the present arrangement. It is pointed out that men like Wm. Cullen and Wm. Hunter would never have succeeded in becoming medical practitioners had they not had the summer vacation to earn the wherewith-all for the next session. Any Scotch student, however, may now avail himself of the advantages of the Carnegie fund, no matter in what department of the university he may wish to enter. Under the circumstances it is urged that the long vacation is really a waste of valuable time. Mr. Carnegie has done and is doing much for the Scotch student. Already his eyes are turned Canada-ward. His provision for retiring professors was princely. We will wait and hope.

BY a recent ruling of the U. S. Revenue Department manufacturers of patent medicines which contain distilled liquors have been put on the same plane as rectifiers and liquor dealers, and druggists handling these preparations must take out a regular liquor dealer's license. The ruling becomes operative December 1st. This is simple justice to the liquor dealer. Whiskey contains about 30 % alcohol, peruna 24·9. Parker's tonic, "purely vegetable," 41·6. Why charge a high license fee for the privilege of selling one and allow the others to go free?

IN Dr. C. K. Clarke's removal to Toronto the Medical Department of Queen's loses an able professor and the profession of Kingston and vicinity a trusted friend. As an alien-

ist Dr. Clarke has few compeers in Canada, and as an effective organizer we know of no equal, Rockwood asylum has for years stood as a model for similar institutions throughout the length and breadth of the Dominion. We congratulate Dr. Clarke on this recognition by the State. It is a promotion and we submit.

QUEEN'S Medical Faculty have decided that they have no use for "drones." In future only "workers" will be allowed to remain. A student who is systematically neglecting his work, or slabbering all over his course, squeezing through a subject here and there, will have to find other quarters. With this we are in entire sympathy.

REPORT OF CASE OF CEREBRAL EMBOLISM.

I CLAIM as an excuse for reporting the following case these points of interest:

1. Well marked hemiplegia immediately following though not dependent upon alleged violent blow to left temple.

2. Absence of heart murmurs to support a diagnosis of cerebral embolism.

3. Autopsy revealing clot in middle cerebral artery.

On Saturday, May 20th, I was called to see Mrs. M. H., married, and about fifty years of age. Upon examination I noticed a left hemiplegia including left side of face. Pulse normal, temperature 99⅕°. She was stupid, but could be roused and answered a few questions quite intelligently. After her arrival at hospital a more minute examination was made and the following points noted:—Hemiplegia left-sided, complete loss of motion and sensation, ptosis of right eyelid, right pupil medium, no reaction to light, left pupil normal, tongue deflected, no aphasia, no coma. A bruise was found on left temple, also on left knee.

Beyond the fact that she was known to be an alcoholic, her history was negative.

Symptoms of onset of present illness appeared shortly after a fall. Accompanying these symptoms there was epistaxis and the frequent evacuation of small quantities of bloody urine.

Dr. J. C. Connell, who examined the eyes, reported as follows:

"Fundus normal in both eyes; no pupillary reaction in right eye; normal in left; lesion of extra-ocular muscles not completely determined; divergent strabismus of right eye; movements of left not satisfactory; looks like paresis of left external rectus. There is at any rate involvement of third nerve of right side."

Heart and lungs normal; urine contained a small quantity of albumin.

The symptoms during her nine days' illness were mainly the symptoms noted on admission, only in a progressively aggravated form. Her temperature ranged about 101° in the evening, and 99° in the morning, reaching 105⅘° on the morning of her death, May 29th. The pulse and respiration increased in rapidity in ratio to the severity of the other symptoms. Usually the bowels moved only when assisted by enemata, and the urine was passed involuntarily.

During the last two days nausea and vomiting followed by deep coma were the main features, terminating in death on the 29th, nine days after admission to hospital.

One very interesting sign was noticeable about the third day of the illness, viz., the dark discoloration of the fingers and thumb of the left hand, due, doubtless, to clots plugging the terminal arteries.

On the morning following her admission to the hospital she disclosed the fact that on the evening of May 19th her husband had knocked her down by striking a blow on the left temple, and that in the fall her head struck a corner of the sofa. She also affirmed that her husband had kicked her several times after she had fallen.

It was found upon enquiry that the symptoms before described immediately followed the alleged assault. In view of the presence of well marked bruises, the history of epistaxis as one of the earlier symptoms, and the voiding of bloody urine, it was impossible to exclude traumatism as a probable cause of

the condition, especially when, as before stated, the heart sounds were normal.

The left hemplegia, together with right ocular paralysis, pointed strongly to involvement of the neighborhood of the right crus cerebri, either in the form of hæmorrhage or fracture of the base, or perhaps both.

On the other hand there was the absence of deep coma and the rather striking discoloration of the fingers of the left, hand, which signs pointed strongly to cerebral embolism as the cause of the condition.

It will be found in the following report of the autopsy, as made by Mr. W. T. Connell, that the latter view was correct. It was also this post mortem finding which exonerated the husband, who was held on suspicion of being responsible for his wife's death.

DR. CONNELL'S POST MORTEM REPORT.

Mrs. H.—Body of woman about 50 years of age; well nourished; body still warm (seven hours after death); rigor and settling developed; a small bruise of 8 or 10 days' age above outer angle left eye; only traces of blood found beneath; another small bruise just over tubercle left tibia, also 8 to 10 days old; left pupil dilated.

Scalp free from bruises or abrasions; skull cap normal; longitudinal sinus contains dark venous blood; dura normal.

Veins of pia and arachnoid filled; dark blood and considerable serous fluid in pia-arachnoidean space, especially on right side; substance of right hemisphere of brain of area supplied by middle cerebral vessel soft in consistency, almost diffluent; on section this portion shows areas of haemorrhage irregularly distributed (mixed red and white softening). The lower ends ascending frontal, and parietal convolutions, and the outer aspect of temporo-sphenoidal lobe was most markedly softened; also those portions of the basal ganglia and internal capsule (practically all) supplied from the basal ganglionic branches of middle cerebral passing through anterior perforated space. Besides these the inferior aspect third frontal, the supramarginal and angular gyri and island of Reil were also more or less softened. The cause of the softening

was a clot in carotid, plugging the opening of anterior cerebral and extending out into middle cerebral for about two inches along the fissure of Sylvius. The anterior cerebral must have received its blood through anterior communicating. The posterior communicating was open up to middle cerebral. In other respects brain was normal. Sinuses contain dark clots—(p.m.), some patchy atheroma in basilar.

Thorax.—Pleuræ show a few old apecal adhesions and in left lung are two or three small healed tubercles toward apex. Left bronchi contain much thick mucus throughout lungs.

Heart.—9 ounces. Milk spot on ant. wall, right ventricle. Muscle looks well nourished. Right auricle contains an attached white clot (ante-mortem), size of walnut. Valves normal on right side. A few pieces of attached clot in left auricle and on thickened nodules on edge of initial valve. These nodules are old and sclerotic. The left ventricular wall is slightly hypertrophied.

Aorta shows scattered patchy atheroma.

Oesophagus shows thickening epithelium (alcoholic sign usually),

Abdomen.—Very marked linea albicantes. Liver and stomach and intestines show considerable ptosis, lower edge of liver being below umbilicus.

Stomach.—20 ounces capacity; thick walled; mucosa papillated and covered mucus. (Chronic alcoholic gastritis.)

Intestine normal. Pancreas normal. Liver 40 ozs.; somewhat fatty.

Gall bladder contains several ounces grren bile.

Spleen shows four marble-sized haemorrhagic infarcts.

Left kidney 4 ozs.; granular surface with adherent capsule; granular kidney (interstitial).

Right kidney 5 ozs.; some pus in renal pelvis from an old cystitis.

Bladder thick-walled and contains some purulent urine; mucosa slaty.

Uterus—parous—bilateral laceration of cervix with cystic erosion.

Death due to cerebral embolism; origin left heart in tags of clot on mitral valves. GORDON W. MYLKS.

ACUTE MASTOIDITIS.

ACUTE Mastoiditis generally follows (1) chronic or (2) acute suppurative otitis media. The fact that mastoiditis frequently occurs as an extention from a chronic suppurating ear is important to keep in mind, because so-called "running ears" are common and but little attention is paid to them. If we get a history of a chronic discharge from the middle ear suddenly ceasing at the same time that a hemicrania begins, we may look for extension of the infective process from the middle ear to the mastoid antrum or adjacent parts.

(3) Primary mastoiditis is occasionally seen and is a manifestation of a tubercular or specific diathesis. Such a case was seen by the author last winter in a child of one year whose mother had pulmonary tuberculosis. The baby had been healthy and was well developed. On Friday her father (a physician) first noticed a swelling over the mastoid. An operation was performed on Sunday, and the mastoid antrum, cells and attic of the middle ear thoroughly curetted. Despite this the bady died of meningitis the following day.

By contiguity a simple furuncle situated over the posterior wall of the meatus may extend to the mastoid.

SYMPTOMATOLOGY.

1. Pain. The prominent symptom met with is intense pain of a dull aching character, worse at night and radiating over the side of the head. Cessation of the pain may ensue with continuation and extension of the destructive process.

2. Swelling and redness over the mastoid process only occurs if a periostitis develops by extension outwards of the inflammatory process.

3. Temperature and pulse. The constitutional disturbance is often quite out of proportion to the severity of the local process, *e.g.*, the T. may not rise above 99½ and seldom rises above 101½.

4. Œdema or bogginess over the mastoid is an important symptom. There may be no appreciable swelling on the part, and yet careful comparison with the other side will show an obliteration of the natural wrinkles, and on firm pressure there is pitting.

5. Discharge from the meatus may be profuse or scanty. If there is drainage of the mastoid abscess through the middle ear the amount of discharge will be greater than is found with simple middle ear involvement. If this pathway is obstructed by granulations or polyps the discharge may be very scanty. The former of these two conditions was exemplified recently in my own practice in a very striking manner. Aside from the history of the case, the profuse discharge and persistent loss of strength, in spite of the exhibition of powerful tonics, were the only symptoms.

6. Tenderness on deep pressure is the most characteristic sign of the involvement of the osseous structures. This varies in location and gives some hint as to the direction in which the necrotic process is extending. It is usually most marked directly over the antrum. Recently a case of subacute mastoiditis in a man was under observation. The discharge, pain and temperature lessened, but a point of tenderness an inch and a half behind the antrum persisted. On operation there was but little destruction in the neighborhood of the antrum, but careful search discovered a necrotic tract leading back to an extradural abscess. In eliciting this symptom great care must be exercised not to disturb the auricle, else a furuncle may be diagnosed as mastoiditis.

7. If one is familiar with the use of the forehead mirror and aural speculum he will almost invariably find bulging of the inner end of the canal at its supero-posterior angle.

This corresponds to the anterior wall of the mastoid antrum, which is much thinner than the external wall.

If the intracranial structures are involved the symptoms are characteristic of the particular region attached.

A. In the case of an infectious thrombosis of the lateral sinus the temperature changes give the key to the situation. They consist in sudden elevation of T. to 104 or 105, which persists but for a few hours and then falls to normal or even lower spontaneously. These changes are easily overlooked unless the T. is taken frequently. The access of the fever is often accompanied by a chill and is followed by a profuse sweat. If the condition persists all the symptoms of general sepsis appear, such as great lassitude, an ashen hue to the skin,

feeble pulse and a dull mental condition. If emboli are developed the most common site of their lodgement is the lungs, causing septic pneumonia. The thrombosis in the lateral sinus frequently extends downward into the internal jugular vein, when its presence is revealed by deep tenderness along the course of this vessel, and swelling along the anterior border of the sterno-mastoid muscle.

B. In case of a diffuse meningitis at the base of the brain, we have intense headache, photophobia, a high temperature (*e.g.*, 102) and pulse rate remaining constant, nausea and vomiting. Rigidity of the muscles of the neck is one of the most characteristic symptoms and occurs quite early. Later strabismus and mydriasis result from paralysis of the third and sixth nerves.

C. Extradural abscess is hardly to be diagnosed as such; possibly a localised headache with a moderately elevated T. are the characteristic symptoms, which may persist after clearing up of the strictly mastoid symptoms.

D. Brain abscess is one of the rarer complications and difficult of diagnosis until some portion of the motor tract is pressed upon. A persistent low T., constant headache, increasing asthenia and progressive hebetude should always arouse suspicion of it. All other conditions being favorable and failure of the patient to improve should suggest this condition, *e.g.*, in acute mastoiditis the severe pain gives place to a persistent general headache and the patient grows dull and unobservant, the T. remaining about normal and the pulse slow, suspect invasion of the cerebral substance. The common location is in the temporal lobe.

When two or more of these intracranial complications occur together the diagnosis is rendered extremely difficult.

DIAGNOSIS.

Some cases of mastoiditis are diagnosed at a glance, others present such difficulties that the most expert observer is puzzled to know whether the air cells of the mastoid are involved, or whether the severe constitutional symptons are due simply to the conditions within the middle ear.

It is well to remember this fact: the opening of the mastoid externally is devoid of danger, whereas the policy of waiting may allow the septic process to pass beyond our reach or control.

The two signs which were previously emphasized and upon which the most dependence can be placed are (1) local tenderness on deep pressure; (2) sagging of the supero-posterior wall of the canal close to the drum membrane.

The presence of both these symptoms is certain, while the presence of one alone often constitutes the sole sign upon which the necessity for operation is based.

PROGNOSIS

is always grave.

Following O.M.S.A. prompt treatment is usually favorable.

Following acute diseases in young children the progress may be so rapid as to baffle all treatment.

Following O. M. S. C. very grave because of liability to central complications. Such conditions as tuberculosis, syphilis and diabetes add to the gravity.

TREATMENT.

When seen early we should aim to abort the attack. Confining the patient to bed, restricting the diet to fluids, using calomel freely followed by a saline cathartic are the first steps. If an acute otitis is present, free drainage of the middle ear must be secured if not already present. This is accomplished by an extensive incision so placed as to divide the folds of mucous membrane in the upper portion of the tympanic cavity and continued outward along the superior wall for at least one-quarter inch. This may be called an internal Wilde's incision and is the only one worth performing.

After free drainage is secured, frequent douching with a hot mild antiseptic solution should be practised. At this stage the continuous application of cold to the mastoid is most valuable. Cold should not be employed for more than 48 hours. If local tenderness persists after this length of time, it is probable an operation will be needed. Leeching may be employed. The objection lies in the local tenderness which follows.

Narcotics must be given cautiously as they mask the symptoms. Phenacetine will relieve pain and reduce fever.

In cases following chronic middle ear suppuration failure to get relief in 48 hours, operative measures are imperative.

In other acute cases the measures enumerated afford enough relief to warrant further delay before resorting to operation.

T. H. FARRELL.

Utica, N.Y.

MOSELY EDUCATIONAL COMMISSION.

TWO members of the commission deal more particularly with medical education. Dr. Gaskell, Fellow of Trinity Hall, Cambridge, writes upon the teaching of Physiology and Anatomy in American universities; Dr. Bradford, Professor of Medicine in University College, London, treats of American methods of instruction in "final" subjects.

After calling attention to the fact that in the United States and Canada there are no *outside* examiners, Dr. Gaskell goes on to describe the methods of teaching. He notes that in this country a subject is much more split up into sub-divisions than in England. For example, physiology, as understood in Britain, is in charge of one professor. In the United States this subject is almost universally taught by three professors, each in separate laboratories and assisted by an ample staff of instructors and demonstrators, viz., a professor of histology (including embryology), one in physiological chemistry, and one in physiology proper.

The method of teaching the primary subjects is by lectures, conferences, recitations (catechetical classes) and laboratory work. Stress is laid upon the recitations and laboratory work. In other words, the dissections, experiments and histological observations which a student carries on in the dissecting rooms and laboratories are made the basis of his recitations. The recitations, or "grinds," as they are called by the students, are intended to compel the student to think out for himself the

principles which each piece of practical work elucidates. The Socratic method of question and answer between the teacher and student is the foundation of all the teaching—after, of course, the student has made a dissection or repeated an experiment. Didactic lectures are in some American universities looked upon as "almost valueless." It is felt that the subject matter can all be found in splendid text-books, and that didactic lectures are therefore not needed. Dr. Bradford makes this same observation regarding "final" subjects. In place of five formal lectures per week, the number has been reduced to two. "In many of the leading school of the country," he says, "but by no means in all, didactic lectures on such a subject as medicine are no longer given, the prevalent view being, that the lecturer cannot very well bring before the student the subject matter in a better form than that in which it is presented in the best available text-books; and thus general medicine is, in many of these schools, no longer taught by lectures. The abolition of lectures is very general in all the subjects of medical education; thus, for instance, professors of anatomy may be met who assert that they have never delivered a lecture."

Instruction is much more systematized in the United States than it is in Canada or Britain. A four years' course is almost universal. The students of each year are divided into sections of from 10 to 20 each, placed in separate laboratory rooms, and their work supervised during the whole day. Thus at Harvard each student spends 888 hours upon histology, physiology and physiological chemistry—"a very much longer time than is given in any English school to the same subjects to the whole of the students."

Dr. Gaskill calls attention to a most important point in the organization of the work of medical schools. He thinks that the "primary" subjects, especially human anatomy and human physiology, should be taught in the arts classes of a university, or in scientific schools unconnected with a medical school. He credits the universities of the West and Middle West with better organization in this respect than those of the Eastern States, or of England. "Such a subject as physiology especially ought never to be taught or studied except in close proximity to the laboratory buildings of chemistry, physics and

anatomy, both human and comparative. All the problems of physiology fall under one of those three heads, and where there is easy intercourse between the teachers and thinkers in these various subjects there will be found the broadest views and the most efficient teaching power. When the scientific buildings of the university are situated many miles away from the medical school, and in the latter alone is provision made for teaching physiology and human anatomy, then such intercourse is very much hindered to the detriment of both schools. I hope sincerely that in the new arrangements for the London University the proposal to concentrate all the preliminary medical subjects, even up to bacteriology, into one or more scientific schools apart from the hospitals will be carried out."

Well equipped laboratories are much more common in the States than in Britain, and necessitate, of course, a larger staff of instructors. In teaching anatomy at Johns Hopkins, in addition to the numerous small dissecting rooms for small classes of students, there is a large room in which are placed a great number of sections through the body at different levels. These sections could all be handled by the students, and when worn out were replaced by fresh ones. In England there is usually one large room, known as "*the* dissecting room," in which all primary students are required to do their dissections, and the body sections are usually under glass covers.

Dr. Bradford sums up his impressions as follows :

1. That the enthusiasm of the teachers and the students was one of the most striking features of his visit to American medical schools.

2. All the leading universities had exceedingly fine and in some cases magnificent laboratories, and the equipment was of a high order of excellence.

3. In the teaching of the non-clinical subjects, the laboratory and practical side was especially developed.

4. Systematic instruction by lectures seemed not to be in general favour.

5. Even in the final subjects, medicine, surgery, &c., the teaching was extraordinarily systematized, but, speaking generally, the students have not the clinical facilities they have in Britain.

6. The scientific investigation of disease in clinical laboratories had reached a very high order of development.

7. The teachers in this country (Britain), in such subjects as pathology, might well consider whether some of the methods in vogue in America, such as the early study of bacteriology and the custom of giving the class unknown organisms and sections to identify, and the careful record of the students' work, are not features thoroughly deserving of imitation.

A. P. KNIGHT.

A CASE OF VARIOLOID.

MASTER B., schoolboy, thirteen years of age. Had been successfully vaccinated four years before. He had sailed from England to Canada towards the latter part of July last. The first symptoms of the disease appeared eleven days after landing in Canada. The only death that occurred on board the ship was that of an infant, and the cause of its death was not ascertained, although the steamship company declared that it was not small-pox. The early symptoms of the disease consisted of loss of appetite, depression and general malaise. Then followed a chill and headache, but no marked backache or lumbar pains. The following day the first appearance of the eruption was noted. The first spots appeared near the lower border of the pectoralis major on the left side, in the coracoid line, and on the front of the right shoulder. These were followed rapidly by a large inflammatory spot on the face below the left eye. These spots consisted of slightly elevated inflamed areas with dark centres. They rapidly reached the pustular stage and were surrounded by much inflammation and swelling of the tissues about. These were at first considered to be due to the stings of some insects, but in a few hours afterwards the eruption came out all over the body. The eruption was discrete and especially marked on the trunk, over the back of the shoulders and on the scalp. On the face the spots were, with one exception, small and not so numerous, and were

especially seen on the forehead and cheeks. Two spots appeared on the left lower eyelid, causing considerable swelling there for a few days. On the legs and arms the eruption was scattered and the spots fairly large in size. A few spots were seen on the back of the hands and between the toes. The eruption ran through the various stages rapidly, and by the third or fourth day the papules had changed into vesicles and pustules. In the vesicular stage the vesicles were slightly elevated, grayish in colour and with a dark central depression. In twenty-four hours the vesicles changed to pustules, consisting of a rounded yellowish elevation lying on an inflamed base. Desquamation commenced on the fifth day and continued for over two weeks. A few of the papules appeared to be latent and did not reach the vesicular or pustular stage till desquamation was nearly completed on all the other parts of the body. These spots, which numbered only about half a dozen, appeared on the neck, shoulders and thorax, and disappeared in about two days. At the end of three weeks after desquamation had commenced, the skin was perfectly clear. A few pits and scars were left, and were as a rule on the sites of the first few papules that appeared. A few words as regards the general condition of the patient. The temperature range ran from 102°.3 to 99°.3, becoming gradually lower as the rash came well out. The pulse, which was somewhat irregular, ran from 104 to 80. About the fifth day temperature and pulse became normal and remained so to the end, as there was no secondary fever. For the first few days the eruption caused considerable irritation and loss of sleep, but by the third day this diminished greatly and gradually disappeared.

The treatment consisted merely in sponging morning and evening with a weak carbolic solution and the application of carbolized ointment, especially in the stage of desquamation. The eyes were washed out with a boracic acid solution and boracic compresses applied to reduce the swelling in the eyelids. The skin, kidneys and bowels were kept active by suitable remedies and a nourishing diet administered. The patient was able to be up and about in between two and three weeks after taking ill and was out of quarantine in twenty-eight days.

H. J. WILLIAMSON.

THE WORK OF PHARMACOLOGY.

THE study of Materia Medica has always consisted in memorizing a tangled mass of details connected with each drug and its preparations. Very few students have been able to retain, in memory, the action and doses of all drugs beyond the period of examination. Consequently, the greater number of students enter on the study of Therapeutics with a very limited practical knowledge of drugs.

Later years have seen a development and an improvement in the study of drugs along practical and experimental lines. By means of animal experimentation and the use of physiological methods and instruments, the student can see with his own eyes the effects of certain drugs, instead of committing to memory a mass of details which often seem contradictory to him. These new methods, as well as processes of research, are all included in the study of Pharmacology. In these days we should not be satisfied to read the details of the physiological action of a drug, and take them for granted; rather, we should see the drug at work, or the result of its administration, local or remote, and we should be able to furnish the explanation for the changes we have observed.

To fulfil this end Pharmacology makes excursions into all subjects forming the medical curriculum. It makes use of the simple physiological experiment of exhibiting microscopically the circulation of blood in a frog's foot to show the effect of a dose of digitalis and other drugs on the blood vessels. Under the microscope the arteries in a frog's foot are seen to contract fully one-fourth in size after a medicinal dose of digitalis. Using the frog again we can demonstrate the action of digitalis on the exposed heart and count the difference before and after administration in the number of beats per minute. Or, with mammals, we can demonstrate the action of digitalis on blood pressure by use of the manometer, and with tracings the student can follow the action of the drug throughout its different stages, the complete tracing being a book more useful to him than the detailed statement in the recognized works on Materia Medica.

With muscle, blood, nerve, &c., exposed, and with all the vital functions at work, the student can ascertain on what tissue the drug acts. For example, the action of strychnine, a Materia Medica of 1886 says of strychnine, "it possesses the property of exciting the spinal marrow and the nerves issuing from it, as well as the muscles supplied by the nerves, without at the same time affecting the functions of the brain except indirectly." The anatomies of that period called the spinal cord "the spinal marrow." A Materia Medica of the present day says: "Strychnine heightens the reflex irritability of the central nervous system from below upwards and finally paralyzes these structures. In poisoning there is an increased reflex irritability of the spinal cord shown most conspicuously by the production of tetanus." The difference between these two definitions is not very great, but the author of the present day does not stop here. He endeavours to locate exactly the seat of the tetanus and proceeds as follows:—"A tetanus or spasm may conceivably be located in the muscle, nerve endings, spinal cord, medulla, brain or sensory endings. Each one of these parts can be cut off from the effects of the drug by certain processes, beginning with the brain and medulla at one end and the sensory endings and muscles at the other, till finally destruction of the spinal cord alone prevents the convulsion. The end of the study is not yet, as the questions now arise as to whether the convulsion is due to direct stimulation of the centres in the cord, or to reflex stimulation, or the more facile passage of impulses, and how closely each one or all of these is connected with the action of the drug. These questions have not been fully answered and leave an immense field for research.

The question also arises, why does strychnine attack the nerve centres and not the peripheral endings? This also remains unanswered. Pharmacology also enables the student to enter upon the study of Therapeutics with a more practical knowledge. When he has seen the strychnine convulsion for the first time and knows the seat of its action, he next is shown the treatment of a spasm. On one animal he experiments with artificial respiration, on another with a chemical antidote, and on another with a physiological antidote.

By such methods the study becomes more interesting and more practical, the effects of all drugs on muscle, blood and nerve are seen, and the routine practice of using one drug may be improved, as an example, adrenalin may at times prove a better blood pressure raiser than strychnine and prove more useful in shock.

The study is yet new and has already led to many changes in the classification of drugs, and will yet lead to greater.

A. E. Ross.

SOME OBSERVATIONS ON THE THYROID AND KINDRED TISSUES, WITH A REVIEW OF THE SYMPTOMS OF EXOPTHALMIC GOITRE.

THE consideration of the various pathologic changes occurring in any tissue is relatively easy when we are in possession of a fairly accurate knowledge of the physiologic functions of that particular tissue, but not so when that information is withheld or at best fragmentary. From the clinician's standpoint there is no field so urgently requiring the attention of physiologists as that of the lymphoid tissues. When the physiology of these tissues is fully worked out we are of the opinion that much of the face of medicine will be changed.

Our knowledge of the function of the thyroid is largely the outcome of a careful study of two conditions—Myxœdema and Cretinism. Myxœdema arises from loss of function of the thyroid, either as a result of atrophy or operative procedure. The condition designated Cretinism is due to congenital absence or atrophy of the thyroid gland. The removal of one lobe of the thyroid and division of the nerves to the opposite lobe produce precisely the same symptoms as follow complete removal of the gland. In either case the administration of dessicated thyroid is equally efficacious, and a condition of apparently normal metabolism is maintained practically so long as the thyroid feeding is continued. Further, the physiologi-

cally active substance is doubtless the colloid material, since this latter has been found in the lymphatics emerging from the gland, and it has been demonstrated, too, that the colloid substance alone is capable of maintaining the metabolic processes in thyroidectomized animals.

Parathyroids.—The parathyroids are small glands, usually four in number, two to each lateral lobe of the thyroid. They are, as a rule, separate from the thyroid, but in some instances they are found imbedded in its substance. Our knowledge of the function of the parathyroids has been greatly augmented during the past few years. From time to time experienced surgeons were astounded to find what had appeared a simple uncomplicated case of exopthalmic goitre terminate fatally three or four days after operation. No reason could be assigned. Finally the suggestion was thrown out that much handling of the thyroid during operation led to an excessive leakage of thyroidal secretion into the adjacent tissues, and thereby into the general circulation. While this explanation was and is to some extent true, it soon became apparent that it could not be considered as final. Even with the utmost care in handling, cases now and then terminated fatally. Investigation showed that the symptoms following thyroidectomy, and leading to a fatal termination (apart of course from sepsis), appear in definite order and are fairly constant. In about three or four days after operation the patient becomes irritable and restless, soon convulsive twitchings of the muscles of the whole body occur, and the case terminates fatally from exhaustion. The pulse rate is not particularly altered, there is no cyanosis, and yet the respiration is profoundly affected, the rate frequently rising to 200 or over per minute.

Subsequent investigations showed that these symptoms are not the result of removal of the thyroids, but of the parathyroids, the confusion being due to the fact that the parathyroids are sometimes imbedded in the thyroidal substance and removed with it. Experimental removal of the parathyroids in animals leads to polypnœa, tetanic convulsions and death.

Thymus.—In man the thymus exists as an active organ during the years of childhood only. At two or three years it has reached its maximum size. It gradually atrophies until at

puberty it is gone. Its function is not known, but there is little doubt that it is the seat of lymphocyte formation. In hibernating animals it persists throughout life. It persists in man and usually hypertrophies in certain diseases, *e.g.*, leukæmia, lympohadenoma, exopthalmic goitre, myasthenia gravis, Addison's disease, and probably in some others. The part played by the lymphocytes in nutrition is gradually being worked out. It is well known that among the normal leucocytes are found some cells of non-granular, hyaline appearance, with a large round nucleus. These are lymphocytes. Ordinarily the lymphocytes constitute about 25 % of the entire number of white blood corpuscles, but it is found that during digestion this proportion is greatly increased. So constant is this increase of lymphocytes during digestion that the conclusion is forced upon us that they are in some way connected with the normal digestive process or with the resultant materials. It is probable that the chief function of the lymphocytes lies in the aid they render in the process of fat-absorption. As confirming these observations we have the undoubted fact of their greater proportionate number in the blood of children at a time of life when the nutritive demands are greatest. It is a clinical fact that adenoid tissue, from which these cells are largely derived in infancy and childhood, increases in impaired conditions of health, and the increase seems to bear some relation to the rate of nutritional impairment, as if these lymphocytes were putting forth a special effort to gain ascendancy over the destructive influences. It is quite probable that the pituitary body, the adrenals and the thymus have functions closely related to those of the thyroids and parathyroids.

Symptoms.—The cardinal symptoms of exopthalmic goitre are enlargement of thyroid, tachycardia, exopthalmas, tremor, mental disturbance and dyspnœic attacks.

(1) Enlargement of the Thyroid.—The gland is, as a rule, moderately enlarged, its vascularity is increased, and it is found, too, that the epithelium lining the vesicles is changed from the cubical to the columnar type, that the colloid material is greatly diminished, and that in addition new tubules are produced, lined not by columnar but by cubical epithelium. It is abundantly evident that this colloid substance is the product of

normal thyroid activity, and it would appear that the development of new tubular spaces lined by the normal cubical cells is an endeavor on the part of nature to compensate for the loss of function incident to the change of epithelium from the cubical to the columnar type. The hypertrophy of the thyroid is usually moderate, but may be scarcely noticeable. The right side following the normal variation in the gland is rather more hypertrophied than the left. In early cases the swelling is soft, owing to the fact that the enlargement then is largely the result of congestion, but at a later stage, when hyperplasia has occurred, it is firm and not infrequently nodular. The size of the goitre may vary much in the same patient from time to time, a symptom that is usually of good omen. In favorable cases it slowly diminishes, though it rarely returns to its original proportions.

(2) Tachycardia.—In a large percentage of cases of exopthalmic goitre the cardiac and vascular disturbances are the first to appear clinically. The pulse is small but as a rule regular; the development of arrythmia usually indicates an unfavorable termination. The heart beats vigorously, and in one of my cases subsequently operated upon and entirely relieved the rate averaged for three years 156 per minute. As we would expect, the heart is usually hypertrophied, and occasionally a murmur develops over some of the orifices, but especially the mitral. In one of my cases there was a marked systolic apical murmur that persisted for several years, yet post mortem examination showed entire absence of any organic change in the cusps. Palpitation is a most distressing symptom and is much aggravated by excitement or exertion. In a case recently seen with Dr. I. Wood, of this city, there was excessive palpitation, especially under the slightest excitement, and the heart-beats were distinctly audible three feet away.

(3) Exopthalmos.—The degree of proptosis varies. In some cases the prominence of the eye-balls is scarcely noticeable, while in others it is so great that ulceration of the cornea results, owing to the imperfect protection afforded by the lids. The widening of the palpebral fissure so generally observed is thought to be due to contraction of the involuntary muscular fibres in the lids and to spasm of the levator palpabrae. Von

Graefe's sign—the lagging of the upper lid when the patient is told to look toward his feet—is fairly constant. Convergence of the eyes in near vision is imperfect (Möbius). The patient will not as a rule notice any change in vision.

(4) Tremor.—To best observe this symptom it is advisable to request the patient to hold her outstretched hands, palms downwards, in front of her and on a level with the shoulder. It will be readily seen that the tremor is associated with certain movements in the flexor and extensor muscles of the wrist, and that the fingers do not vibrate independently, an observation from which we must infer that the interossei and lumbricales are not affected. The most marked tremor is usually observed in the arm, occasionally in both upper and lower extremities, and less frequently in the whole body. It is a fine rythmic movement, about 8 or 9 per second, and entirely involuntary. Excitement increases the movements.

(5) Mental Disturbance.—Perhaps one of the most important set of symptoms, and one not sufficiently considered in our ordinary text-books, is the profound impression made upon the mental condition of the patient. As time goes on it gradually becomes more and more apparent that the secretion of the ductless glands has much to do in maintaining a state of nervous equilibrium. Investigations now going on seem to lend color to the view that certain disturbances of secretion of the adrenals stand, to some extent at least, in casual relationship to neurasthenia. It is pointed out in this connection the frequency with which floating kidney occurs in neurasthenia. The first symptom of this nervous instability is usually an irritability of temper, and a lack of interest in her usual work; next we find inability to concentrate the mind on any work, forgetfulness, and the gradual development of an unreasoning apprehension. Following closely in the wake of these are insomnia and periods psychic perversion, depression and exhaltation alternating. If treatment is long deferred the case either dies from exhaustion or finds its way to an asylum for the insane as one of mania or melancholia.

(6) Dyspnœic Attacks.—Paroxysms of dyspnœa are a curious feature of the disease. The theory that they are due to either direct pressure on the trachea or on the nerves of

the larynx cannot longer be advocated. Since extirpation of the parathyroids leads to a dyspnœa resembling that observed in exopthalmic goitre, it is assumed that the parathyroidal secretion is in some way antidotal to that of the thyroid, and that the dyspnœic attacks occur only when the parathyroids are removed or when their secretion has been greatly lessened. Whatever the true explanation of these distressing and dangerous attacks may be, it is evident that one of the causal factors is a disturbance in the relationship between thyroidal and parathyroidal activity.

JAS. THIRD.

OJIBIWAY OBSTETRICS.

THE practice of Obstetrics necessarily brings up one question prominently before the mind of every obstetrician; why does Nature make the act of bringing forth offspring such a painful and dangerous ordeal? The lower animals beget their progeny with comparative immunity from pain and danger. Why, then, do our Caucasian women suffer the agonies incidental to motherhood?

The authors of the various obstetric text-books answer this question by several very valid and logical reasons. First, they say, it is the enfeebled vitality and poor muscular development of the woman of to-day. Secondly, the wearing of corsets and tight lacing deforms the figure, mal-places the abdominal viscera, and weakens the strength of the wearer. Thirdly, we pay for our high degree of development with a larger cranium in the infant, as contrasted with, let us say, the Indian, and, consequently, greater pain in its passage through the birth canal.

Writing along this line Hirst tells of the squaws on the western plains. A squaw, on the march with her tribe, feeling the pains of labor coming on, would go to the nearest bush, dismount from the pony, and in a short time labor would be over. Then she would wash the papoose and herself in the nearest stream, and rejoin the tribe apparently as well as ever.

I recently had the opportunity of attending two cases of midwifery in an Ojibiway tribe, and in both cases the patients appeared to suffer as much as the ordinary robust white woman, nor was labor one whit quicker.

Two Indians asked me, early one morning, to come to their camp at once and see a squaw who was dying. Together with an interpreter I got into a birch-bark canoe and, after a two-mile paddle down a pretty reed-grown river, reached the camp.

When a squaw is to be confined, the husband pitches his wigwam some distance away from the main camp and takes his squaw there. They have no M.H.O. or Board of Health, but this is decidedly a sanitary procedure.

I found my patient groaning in pain and a group of seven stolid fat squaws squatted in a semi-circle around the tent opening. The cause of her groans was a delayed placenta, which I quickly expelled by Crede's method. The groans ceased at once, and this simple procedure made my reputation in the tribe, as their prognosis had been unfavorable.

Three days later I was called at 4 p.m. to see another squaw in labor. There was the same interested semi-circle to see, mark, learn and inwardly digest. Pains had come on at noon and were steady but not very strong. The interpreter and I waited until 2 a.m. before the long-expected papoose put in an appearance, which he did in the L.O.A. orthodox manner.

That woman had been in pain for over fourteen hours. A tribe on the march could get a long start on a squaw who was in labor for that length of time. In neither of these cases could I see that the muscular, strong physiqued, non-corset-wearing squaw had any advantage over her white sister.

Ojibiway obstetric technique is very simple and yet tends to promote immunity from puerperal infection. The floor of the tent, on which the woman lay, was covered with fragrant, antiseptic spruce, pine and balsam boughs. The tent was the ordinary cotton kind, with an annex constructed of poles and birchbark. A box stove in the annex, stoked by a stalwart squaw, kept the tent comfortably warm.

Running half way across the tent was an apparatus constructed as follows: four birch stakes had been driven in the

ground—two at each end, and these supported a stout birch pole.

The time passed slowly. The squaws and ourselves sat around the fire, they chatting in their language, and we in ours. Occasionally a little dark-faced girl showed her dusky laughing countenance through the tent opening and made some remark which caused considerable merriment among the squaws. Probably they had told her the old, old story of the stork, or its Ojibiway equivalent.

Towards one o'clock the pains became severe. Then the squaw got up, knelt at the structure described above, and clutching the cross piece tightly between her arms and breasts tried to aid nature in expelling the infant—a proceeding similar to our tying a sheet to the end of the bed and having the patient pull on it.

She lay down again, the pains became more severe, and the Indian midwife in attendance protected the stretching perinaeum with her hand.

The child born, she very rapidly tied and cut the cord, and placed the infant without washing into a birch-bark basket lying ready. Another basket received the placenta, and a third served as a basin for our hands.

I was much interested in the apparatus the squaws carry their papooses in, and which serves the triple purpose of nursery, cradle and baby-carriage. At first sight it appears crude, awkward and uncomfortable. In reality it has many good points. The "mossback"—English name—tends to make the child straight-limbed and strong-backed. It is handy, can be picked up and laid down any place, and the papoose can nurse without leaving its resting-place. That it is comfortable, had you seen, as I have seen, three papooses resting in their "mossbacks" against chairs and crowing lustily at each other and their admiring mothers, you would never say an Indian baby was uncomfortable.

One naturally wonders what takes the place of the diaper. Here again the sanitary wisdom of the Indian has us beaten. We wash our diapers when soiled. They surround the pelvis with moss and burn it when soiled.

The obstetric technique of an Ojibiway midwife should

render puerperal sepsis a danger little to be feared. The drawing apart from the rest of the tribe, the fragrant bough-spread floor and bed, the absence of vaginal examinations, and the expulsion of placenta and blood clots by having the patient sit upright for a few minutes, all tend to a clean uterine and vaginal cavity.

Again, I believe that the apparatus previously described is to be preferred to the sheet pulling arrangement. In the latter you have the uterine pains, plus contraction of abdominal muscles. In the former you have in addition the force of gravity excited directly over the birth outlet.

L. W. JONES.

Portland.

ANÆSTHESIA.

IT would be well for the anæsthetist to bear in mind that too forcibly pulling the tongue forward or too vigorously swabbing the larynx, in a case of respiratory collapse, increases the inhibition and thereby the danger. This can be verified in any physiological laboratory.

Divulsion of the anus increases the respiratory activity and is therefore of value in resuscitating the patient.

In operations on the rectum requiring divulsion of the anus the patient should be fully under chloroform before stretching is attempted, and while the stretching is being done the chloroform mask should be removed. The reason of this is evident. Divulsion increases respiratory activity, and if the saturated mask is held over the nose at this time more chloroform is inhaled than otherwise would be with the dangerous collapse so often witnessed in the hæmorrhoidal and kindred operations.

BOOK REVIEWS.

NATURE AND MAN: The Romanes Lecture. By Edwin Ray Lankester, M.A., Hon. D.Sc. F.R.S., Hon. Fellow of Exeter College, Director of the Natural History Departments of the British Museum, late Linacre Professor in the University of Oxford. Delivered at Oxford June 14, 1905.

THE author defines "Nature" as "the entire mechanism of the universe, the kosmos in all its parts, and 'Man' as a part of Nature, a product of the definite and orderly evolution which is universal; a being resulting from and driven by the one great nexus of mechanism which we call Nature."

The general process by which the higher forms of life, including Man himself, have been produced has been shown by Darwin to depend upon two important properties of living matter; first, that property of adding to itself by taking up chemical elements or compounds as food, and transforming these into living matter; and, secondly, that of separating from itself minute particles, or germs, which grow independently and in turn reproduce themselves. The detached or pullulated germ inherits from its parent certain peculiarities of form and structure. This is Heredity. The germ as ordinarily produced is never identical, in all respects, with the parent. It shows Variation. In virtue of heredity these congenital variations are transmitted to new generations. Man, by selecting variations of animals and plants, has intensified such variations and produced animals and plants differing essentially from those with which he started.

It was Darwin's merit to show that a process of selection —"natural selection"—must take place in the free, untouched conditions under which animals and plants exist on the globe. Both animals and plants produce germs or young and in vast excess. The property of variation ensures that amongst this excess of young there are many differences. Eventually those survive which are best suited to the conditions under which this particular organism has to live. This is "the survival of the fittest."

The struggle for existence of Darwin is the struggle amongst all the superabundant young of a given species, in a given area, "to gain sufficient food, to escape voracious

enemies, and to gain protection from excesses of heat, cold, moisture or dryness," and is not, as is often stated, a struggle between different species. The struggle between different species receives but a passing notice from the author, but here again there is ample evidence of a real and desperate struggle, however peaceful the battle-field may appear to us. A familiar illustration of this may be observed in almost any field of growing grain in May or June. A large crop of weeds means a poor yield of grain. It is a struggle for existence, and death is the penalty of failure.

Again, the struggle among the number of species in natural conditions differs entirely from the mere struggle for social advancement or wealth. In Nature's struggle for existence death is the fate of the vanquished, whilst the only reward to the victors is the permission to re-produce their kind. It follows that the fiercest struggle will be between the immature population of one and the same species, precisely because they are of the same species, and have exactly the same needs.

Just how or when Man emerged from the terrestrial animal population, so strictly controlled by natural selection, is a matter upon which we are gradually gaining more information. Judging from the analogy (which he admits is not wholly trustworthy) furnished by the history of other large animals, now living side by side with man--such as the horse, wolf and hyæna—it is not improbable that it was in the lower Miocene period that natural selection began to favor that increase in size of brain of a large but not very powerful semi-erect ape, which eventuated after some hundreds of thousands of years in the breeding out of "a being with a large brain-case, a skilful hand and an inveterate tendency to throw stones, flourish sticks, protect himself in caves, and in general to defeat aggression" and satisfy his natural appetites by the use of his wits rather than by strength alone, though in this latter he was not deficient.

Increased brain substance implies increased "educability" —an increased power of storing up individual experience. It follows that the possessor of the enlarged brain had, in conditions of close competition, an immense advantage, and that in successive generations the larger and more educable brains

would survive and mate and thus larger brains would be produced.

The bulk of Man's brain has not increased since early Paleolithic times, but its powers and qualities have been, and are, steadily developing. As evidence of this the author might have referred to the *sulci paramediales*—a series of short, irregular furrows on the external surface of the frontal lobe of the brain, close to the supero-mesial border of the hemisphere. These rudimentary sulci are never found in the ape, and are better marked in the higher types of the human brain.

The mental qualities which have developed in Man so far transcend the rudimentary conditions traceable in some of his animal associates as to justify the view that Man forms a new departure in the gradual unfolding of Nature's predestined scheme. This mental development has been such as to cut him off entirely from the general operation of the process of natural selection.

Man is Nature's rebel. He has proceeded so far in his interference with extra-human Nature, has produced, not only for himself, but also for the living organisms associated with him, such a special state of things by his defiance of Nature's pre-human dispositions, that he cannot turn back, he must either go on and acquire firmer control of the conditions or "perish miserably by the vengeance certain to fall on the half-hearted meddler in great affairs." While we are disposed to agree with the author that Man cannot return to Nature, yet it must be admitted that in working out his destiny he finds himself by times in a blind alley and is forced to retrace his steps. In medicine we have ample evidence of this. In our modern methods of treatment of many diseases of the human system, notably tuberculosis, we have returned, to some extent at least, to the simple life of our American aborigines. We recognize that our double-doored, double-windowed houses, give us a measure of comfort, but at a terrible cost. We have retraced our steps, branched out anew, and the way seems clear.

In extra-human Nature there is no disease and there is no conjunction of incompatible forms of life, such as Man has

brought about on the surface of the globe. The process of selection of the fittest necessarily eliminates those diseased or liable to disease. Disease, both of parasitic and congenital origin, occurs as a minor phenomenon in the extra-human system of Nature. It seems a legitimate view that every disease to which animals, and probably plants too, are liable, except as a transient and rare occurrence, is due to Man's interference.

The diseases of cattle, sheep and horses are not known except in domesticated herds and those wild creatures contaminated by Man's domesticated productions. A solitary case of a ravaging epidemic constantly recurring in animals living in extra-human conditions is the phosphorescent disease of the sand-shrimps of the northern coast of France. Recent investigations seem to indicate that this disease may be due to sewage, and may yet fall into the category of those resulting from Man's interference. It is probable that, from time to time, under influences of certain changes of climate or other causes, parasitic disease has for a time ravaged this or that species newly exposed to it, but the final result is either extinction or adjustment—death or toleration. The disease does not establish itself as an ever-present enemy. It either obliterates its victim or settles down with it into relations of reciprocal toleration.

Man, however, "treats" disease and staves off the "adjustment by death," and thus accumulates vast populations of unadjusted human beings, animals and plants, which from time to time are ravaged by disease—producing uncertainty and dismay in human society.

The knowledge of the causes of disease has become so far advanced in recent years that it is a matter of practical certainty that by the unstinted application of the known methods of investigation, and consequent controlling action, all epidemic disease could be abolished within a period of fifty years. It is merely a question of the right employment of the means at our command. Where there is one naturalist at work there should be a thousand. It should be as much the purpose of the State to protect its citizens in this respect as to provide defence against human aggression. The parasite and much of its life-history has been discovered in the case of splenic fever, leprosy,

tuberculosis, diphtheria, typhoid fever, glanders, cholera, plague, tetanus, gangrene, sepsis (of wounds), puerperal fever, malaria, sleeping sickness, pneumonia, and perhaps some other diseases, fatal to man. A knowledge of the parasite has led in some instances to its control. Antiseptic surgery, by defeating the pyogenic organisms, has saved thousands upon thousands of lives and removed an incalculable amount of suffering. The development within recent years of serums containing antitoxines appropriate to each disease has saved many lives and is full of promise.

The control is slowly being obtained, but why should we be content to wait long years, perhaps centuries, when it is within our reach? If more men were employed by the State to study and experiment on this matter, the knell of infectious diseases would soon be sounded.

Man, however, in removing disease, creates a new difficulty for himself. That difficulty is the increase of human population beyond the capacity of the earth's surface to provide food and other necessaries of life. By rebelling against Nature, Man has made himself the only animal that constantly increases in numbers. When disease is controlled this increase will be more rapid. No attempt has been made by the more advanced communities of civilized man to prevent the multiplication of the weakly or of those liable to congenital disease. It is true inquiries have been conducted by public authorities, and here and there something like a panic has appeared as a result of this investigation, but the only possible method of dealing with this matter has not been systematically applied. Man can only deal with this matter by thoroughly investigating the laws of breeding and heredity, and proceeding to apply a control to human multiplication based upon certain and indisputable knowledge.

The author concludes his paper with a re-assertion of his position—"the knowledge and control of Nature is Man's destiny and his greatest need."

JAS. THIRD.

INTRODUCTORY PHYSIOLOGY AND HYGIENE. By A. P. Knight, M.A., M.D., Professor of Physiology, Queen's University, Kingston. 8 vo., 198 pages. The Copp, Clark Co., Limited, Toronto.

This little brochure from the pen of Dr. A. P. Knight has been favourably received and commented on in many of the daily journals. If we must have children taught Physiology and Hygiene in our preparatory schools, it is well that the text books should be written by men of the capability and sanity of Professor Knight, who has, in addition to these desirable qualifications, the practical experience gained by the common sense teacher. It requires a good deal of ingenuity to model a preparatory text-book that shall not hopelessly befuddle juvenile minds perfectly innocent of the intricacies which make the average medical student feel that Physiology is one of the most complex subjects he has to deal with. The author, quite unlike many of his predecessors, has kept this point constantly in view, and if he teaches less ornamental physiology than has been customary, he has substituted a wealth of information that juveniles (and many of their teachers) might acquire without injury to themselves. Perhaps it might not be going too far to say that teachers will profit even more than children by a careful study of the brochure ; and will be able to impress on the minds of their pupils the importance of the facts brought out by the author.

If any portion of former text-books on Physiology and Hygiene has been open to particular condemnation, it is the "Temperance Department," which has generally been fashioned on the good old methods so frequently adopted by extremists, who believed that intemperance was to be knocked on the head by a free use of the bludgeon. They were not particular either about telling the whole truth, and many of their so-called facts were at least open to a good deal of question. One might make excuse for some bitterness when he realizes the harm done to the human race by the improper use of alcohol, but it is questionable if the best method to get rid of the evils of intemperance is to teach children things which make them prigs until they learn the truth, when the swing of the pendulum may go too far in the other direction. The truth seems to be in order at all times, ahd certainly intelligent teaching regarding the use and abuse of alcohol, such as Dr.

Knight offers, is apt to develop more common sense views than that just referred to. Dr. Knight very properly points out that the indirect results of alcoholism are those most to be dreaded, and this is just the point that should be emphasized. The author is fully impressed with the truth of the old adage that "cleanliness is next to godliness," and if the pupil is as fortunate in his Sunday-school text-books as he is with his every-day copy of Physiology and Hygiene he should grow up an ideal being. It is certain the average boy will hail with delight the statement on page 41, to the effect that five meals a day are not out of order to one convalescing from an illness, and that there is little danger from over-eating at any time if plain food only is taken. This accords with boyish theory and should bring the doctor well deserved popularity.

As suggested at the beginning of this review, if we must have Physiology and Hygiene taught in the preparatory schools, and it is apparently settled beyond doubt that the wisdom of the present day thinks it imperative that such should be the case, by all means let the task of preparing the texts books be left in the hands of as safe and careful authors as Professor Knight.

The little work is well printed on good paper and the type of a variety consistent with the warnings regarding eye strain, so intelligently discussed by Dr. Knight in the ea.ly chapters.

The illustrations, largely made from photographs by Mr. Cyril W. Knight, are capital.

C. K. CLARKE.

PERSONALS.

Dr. J. C. Connell, Dean of the Medical Faculty, returned from Boston and New York in time for the opening of the College, September 27th.

Dr. Spankie, Wolfe Island, spent greater part of August and September in England.

Dr. W. Gibson, '04, has decided to locate in Kingston. He was house surgeon in the General Hospital '04-5.

Dr. McCarthy, '97, who has been practising at Wolfe Island for several years, has removed to the city.

OBSERVATIONS.

The social position of the medical profession is highest in Spain and lowest in Italy.

When the patient dies on the operating table blame the anaesthetist; when the case goes septic blame the nurse; when the patient recovers take all the credit to yourself.

There is something about uninterrupted success that is defiling; our mistakes keep us humble.

The Golden Rule is worth all the codes of ethics ever written.

Think twice before you speak ill of a fellow-practitioner, and then talk to yourself.

SUPPLEMENTALS.

September, 1905.

Junior Physiology.

S. Shannon.

Junior Chemistry.

T. R. Ross, W. M. R. Palmer, A. MacDonald.

Senior Anatomy.

W. H. Ballantyne, G. F. Cliff, A. J. Maclachlan.
W. H. Lavell, F. R. Nicolle.

Senior Physiology.

W. H. Ballantyne.

Histology.

W. H. Ballantyne.

Senior Materia Medica.

W. H. Ballantyne, R. F. Nicholls, H. E. Bond,
M. A. Carmichael, P. G. Twitchell.

Senior Chemistry.

W. M. R. Palmer, S. Shannon, B. A. Sandwith.

Junior Obstetrics.

M. A. Carmichael.

Junior Medical and Surgical Anatomy.

D. M. Young.

Junior Medicine.

E. G. Twitchell.

Junior Pathology.

D. McLellan, W. G. Laidley, D. M. Young,
M. A. Carmichael, W. J. Geddes, W. M. R. Palmer,
A. J. Maclachlan.

Sanitary Science.

D. M. Young, S. S. Shannon.

Jurisprudence.

C. P. Templeton.

Senior Practice of Medicine.

W. H. Lavell.

Clinical Medicine.

G. D. Gordon, W. H. Lavell, S. J. Keyes,
F. Kingsley.

Senior Surgery.

W. J. Geddes.

Clinical Surgery.

R. H. Scott.

Senior Obstetrics and Gynaecology.

W. H. Ballantyne, S. J. Keyes.

Senior Pathology.

W. J. Geddes, W. H. Lavell.

Bacteriology.

H. E. Moore.

Senior Medical and Surgical Anatomy.

W. H. Ballantyne.

Eye, Ear, Nose and Throat.

A. J. Maclachlan, R. H. Scott, F. Kingsley.

FINISHED FOR DEGREES, SEPTEMBER, 1905.

W. J. Geddes.....Deseronto
S. J. Keyes.....Kingston
F. Kingsley.....Wolfe Island
W. H. Lavell.....Kingston
A. J. Maclachlan.....Glencoe
R. H. Scott.....Pembroe