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A CASE OF CARCINOMA OF THE UPPER END OF THE ŒSOPHAGUS, WITH PERFORATION INTO THE TRACHEA.

BY

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AND

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There are several points of interest in the case here described; the growth is situated in the upper part of the œsophagus, which is by no means the common site for carcinoma, as the disease generally affects the tube at about the level of the bifurcation of the trachea; perhaps only a tenth of all cases of the disease are found in the neck region; the perforation of the growth occurs in a large percentage, perhaps a third, of all cases, and the most common place of perforation is into the air passages; herein our case is of the usual type. It occurred in a woman of 32; only a small fraction, less than a tenth, of cases occur before the 40th year, and von Hacker's case in a woman of 31 years, is mentioned among the notable cases showing the neoplasm at an early age. The male is considered more liable than the female sex, in the proportion of three to one.

Annie B., æt. 32, was admitted to the laryngological department of the Royal Victoria Hospital on the 18th of May, 1906, on account of difficulty in breathing and in swallowing. She gave the following history of her illness: ten years ago she had, for a short time, some difficulty in swallowing. A large mouthful or a mouthful of very solid food seemed to choke her and she was compelled to eat and chew her food very fine. She consulted a physician and soon recovered completely. She remained well until October, 1905 (nine years), when she began to have a feeling of a "lump in the throat" and to have again some difficulty in swallowing. This continued, but improved

somewhat, until December, 1905, when she developed a pain and soreness in the throat which has always been in the evening and at night. Her swallowing was not much impaired until about four months before admission, when she began to have some difficulty and, at times, she coughed and expectorated a little blood. The pain and soreness grew worse, and the difficulty in swallowing increased, until about two weeks before admission, when she was no longer able to swallow solid food. A few days later,—about five days before admission,—she began to have difficulty in breathing. This increased steadily until the 24th of May,—six days after admission,—when the difficulty in breathing had become so great that she was referred to me by Dr. Jamieson for immediate tracheotomy. A low tracheotomy was done, which gave immediate and complete relief. On the 28th of May,—four days later,—it was observed that when she attempted to drink milk a small quantity found its way into the larynx and trickled down the trachea. This increased rapidly, so that it was impossible to feed her by the mouth and, in my absence a gastrostomy was done by Dr. Garrow on the 30th of May; and, although the stomach feeding by this method was quite satisfactory, her condition grew worse instead of better. On the 31st of May there was considerable discharge of pus and mucus through the tracheal tube. On the 3rd of June the discharge was very free, and she was troubled a good deal with cough. On the 18th of June she had an attack of severe dyspnœa and cyanosis with much pus from the trachea. The Senior House Surgeon, Dr. McKenty, was hurriedly called to see her. He promptly dragged her head and shoulders over the side of the bed letting her head down nearly to the floor, when about a pint of stinking pus flowed out from the trachea and the mouth. This gave complete relief, and while so relieved,—during the next three days,—the same condition recurred and was similarly treated two or three times each day. There was definite dulness on percussion on the back of the chest, on both sides, but not anywhere else, and the dulness did not vary with change of position of the patient. A needle inserted deeply in the 6th space midway between the spine and the scapula border drew off a little pus. The patient's nutrition was very bad, as shown by the lowered vitality of the tissues over the prominences of the back and limbs. She was clearly dying and no attempt was made to evacuate the pus. She died on the 21st June, just four weeks after the tracheotomy operation.

Pathological Report.

Autopsy showed that the patient had died of bilateral aspiration pneumonia, with abscesses and gangrene of the lungs.

Body.—Small, lightly built, emaciated; low tracheotomy wound with little or no reaction around it, edges sodden and limp; gastrostomy wound.

Organs of Neck.—In the œsphagus is an ulcerated, irregular mass of new growth, of which the greater part affects the anterior wall; it begins 1 cm. below upper edge of œsophagus and extends 7 cm. down, at one place being annular and extending around the whole circumference of the tube. A stenosis, almost complete, existed 2.5 cm. from the upper edge of the œsophagus. The growth is nowhere greatly heaped up, but is generally in small, whitish nodules. A vertical slit indicating perforation into the larynx begins 3.5 cm. from the upper border of the tube, is 2.5 cm. long and 3 mm. wide at its widest point, with the parts unstretched. At the lower end of the growth the nodules are no longer in contact, but constitute scattered masses. The rest of the œsophagus shows no change. No secondary growths are anywhere seen. The thyroid gland is healthy. On opening the larynx, the perforation extends downwards from the third ring for 2.75 cm., and has everted, pouting upturned edges of a dirty reddish colour, the rim of the perforation appearing to be made up of cancerous tissue. The opening in the trachea is gaping and has a maximum width of 1.5 cm. Evidently the perforation has been preceded by a considerable degree of cancerous infiltration of the tracheal wall, which is, in addition, dark red with dirty greenish material adhering to it.

Thorax.—Bronchitis exists; the lower lobes of both lungs are dark-greenish, heavy, consolidated, with many irregular necrotic cavities, and some abscesses, the largest, 2 cm. in diameter; these latter contain dark greenish purulent material; and the bronchi exude material similar to that seen adhering to the tracheal wall. The heart showed no change, but some fatty change of the aortic intima is present.

Abdomen.—Cloudy swelling is noted in the liver and kidneys, and there are several fibroids of the uterus.

Microscopically, the growth is seen to be a typical epithelioma.

In discussing the case from its clinical aspect, the cause of the dyspnœa, for the relief of which tracheotomy was done, is not at all clear; the size of the growth is relatively inconsiderable, and there is scarcely enough new growth to explain a tracheal stenosis; it may have been that there was in or near the new growth a breaking down with the formation of an abscess, which subsequently burst with the expulsion of pus, which was referred to as occurring shortly after tracheotomy. It must be stated against this, that post mortem, no abscess cavity

was found in the vicinity; if one had existed, it is barely possible that it could have been obliterated, but, as is observed elsewhere, there is an exuberant appearance of the edges of the perforation on the tracheal side that makes the idea tenable that there was an abscess which bulged into both tubes, and, subsequently breaking out, established the large fistula which finally connected them.

The patient was an unmarried woman, 32 years of age, with good family history and, with the exception of the lesion in the throat, with sound organs. She had never had any illness except typhoid fever twenty years ago. The history would seem to indicate that some traumatic or benign ulcerative lesion about the upper part of the œsophagus at 22 years of age, was followed nine years later by the development of epithelioma, which invaded the larynx from behind, and finally ulcerated into it, allowing particles to pass down the trachea into the lung. The attacks of dyspnœa during the last three days of life were really due to "*pus drowning*" through the bronchial tubes becoming filled with pus from the lung abscesses. If the patient had come under observation a little earlier, removal of the larynx, a portion of the pharynx, and the upper end of the œsophagus would have completely extirpated the disease with a good prospect of complete recovery.

THREE CASES OF TYPHOID FEVER WITH UNUSUAL COMPLICATIONS.

BY

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AND

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Three cases of typhoid fever occurring within a short interval at the Montreal General Hospital illustrating three somewhat unusual complications of that disease, seemed of sufficient interest to bring before this Society. The first case, presenting features of blood destruction, accompanied by convulsive seizures, is related, on the one hand, to the second case, which also showed marked blood destruction with multiple hæmorrhages, and on the other hand to the third case, which showed convulsive seizures of another type which were the indirect cause of death.

The first case was that of a young mulatto of 18, who was admitted to Dr. Blackader's service in the Montreal General Hospital on Aug. 21, 1905.

Read before the Montreal Medico-Chirurgical Society.

Nine days before admission, after getting wet, he began to suffer from general malaise with severe pain in the back, some headache, and diarrhœa. His past history was negative. He was an exceptionally well built, muscular young man. His temperature was 104, pulse 80, respirations 24, conjunctivæ distinctly icteroid. The thoracic organs were negative, the abdomen slightly distended, liver 2½ inches in vertical diameter, and spleen readily palpable. There was occasional vomiting of bile-stained fluid.

The urine averaged 12 oz. daily, was of sp. g. 1011, albumen, casts and bile were definitely present.

On the following day the Widal reaction was positive and on the 27th, 6 days after admission, the following note was made: "For the last few days, patient has complained of pain and tenderness in right hypochondrium. There is distinct resistance and a sense of fulness quite absent on the left side."

The bile in the urine is quite marked and also the icteroid tint of conjunctivæ; stools are of normal colour. There is considerable pain over left side with hurried respiration but nothing in thorax to account for it. There have been at intervals distinct attacks of chilliness. Cholecystitis was suspected and Dr. Elder who saw the patient concurred in the opinion. Examination of the urine at this time showed albumen and casts, and *haemoglobin;* spectroscopic examination gave definite spectrum of methæmoglobin. No red cells were found.

On the 29th, two days later, there was occasional vomiting and considerable hiccough, with a feeling of suffocation. Patient had grown very noticeably paler and blood count which showed 75% Hg. on the 24th showed only 50% on 27th with a diminution in red cells from 2,830,000 to 2,706,000 and 16,200 leucocytes.

Differential count showed:

Polymorphs	90
Large mononuclear	4
Small "	3
Transitional	3

with poikilocytosis and polychromatophilia. There were numerous deeply staining very small red cells, and the other red corpuscles showed marked anæmia. Shortly after midnight of the 29th, patient was suddenly seized with a convulsion consisting of a series of tonic spasms affecting the right side of the face and right arm, the right leg jerked rarely. There was conjugate deviation of both eyes to the right, pupils equal but inactive. Face was drawn well to the left side.

Patient was partly conscious and seemed to be suffering from air hunger.

Reflexes on right side were very greatly increased; no Babinski's sign, and no incontinence were present.

Another convulsion followed in a short time yet the pulse remained full and strong. Respiration steadily failed and finally ceased fully 1½ minutes before pulse stopped.

The autopsy performed by Dr. von Eberts, showed all the organs to have a faint yellowish tinge. The heart was pale and flabby, spleen large and very soft; both kidneys were enlarged, capsules peeled readily and the organs showed marked cloudy swelling. The liver was also large and showed cloudy swelling. The gall bladder was normal. For 4 feet above ileo-cæcal valve the Peyer's patches and solitary glands showed hyperplasia but mucosa was intact. Mesenteric glands were also hyperplastic. The bladder contained 2 oz. urine giving spectrum of methæmoglobin. The brain and membranes were normal.

The second case which is somewhat related to the first, was an Italian of 25 years, whose previous history showed nothing of importance. His illness began on Dec. 27th, 1905, with headache, general pains and slight cough, but no epistaxis. He entered the Montreal General Hospital on Jan. 2nd, 1906, with temperature of 102, pulse 118, respiration, 20. He was a strong muscular young man, his tongue and lips were dry and he was very restless but mentally clear. He had considerable diarrhœa. The spleen was very considerably enlarged and a number of rose spots were present on the abdomen. The thoracic organs and central nervous system were negative but the urine showed a very considerable amount of albumen with granular and hyaline casts, a sp. g. of 1020 and small quantity. Ehrlich's reaction was present and a few days after admission the Widal was positive.

He ran the ordinary course of a fairly severe typhoid until Jan. 8th, the 14th day of illness, when he had a chill, his temperature rising to 106. This was followed the next day by another chill. A week later the temperature rose but without a chill and the following day, the 21st of the disease a patch of erysipelas appeared over cheek and nose. On Jan. 22nd there was noted a diffuse purplish subcutaneous area about 3 x 2 in. over the lower end of the sternum and the rose spots present had changed to a purplish colour.

From this date onward these subcutaneous hæmorrhagic areas increased in number and size, appearing all over the body. The eyelid previously swollen as a result of the erysipelas also assumed a slaty purplish hue. Associated with this eruption there appeared epistaxis,

hæmaturia, hæmatemesis and melæna; a blood count taken on Jan. 27th, showed Hg. 75, R. B. C. 3,640,000, W. B. C. 15,900. A blood count taken by Dr. Gillies on Jan. 29, showed no growth and examination for malarial parasites was negative. The patient died on Jan. 30th, the 36th day of his illness.

The autopsy, performed by Dr. Gillies, showed great swelling of both eyelids from which strepto and staphylococci were grown.

Large purpuric patches were seen over thorax, abdomen, face, arms and legs. There were hæmorrhagic ecchymoses of conjunctivæ, submucous hæmorrhages throughout gastro-intestinal tract, and pigmented scars above ileo-cæcal valve. The kidneys showed swelling of cortex and pelves are filled with clotted blood.

A large purpuric patch was seen at the base of the epiglottis.

The next case was that of a young Englishman of 26, a labourer who had been in this country about 6 months.

Three weeks before his admission to the hospital he complained of some cough and pain across the chest and of feeling seedy. He took to bed and there remained until the entrance to hospital and aside from some headache and rather profuse diarrhœa he was fairly comfortable.

On inquiry into his personal history he stated that for the past 3 years he had suffered from fits nearly every night, but denied ever biting his tongue or passing urine.

His habits were good, there being no alcholic nor venereal history.

He was a tall thin man, poorly nourished and, though clear in his mind, was of a rather low order of intelligence. His temperature on admission was 103 2-5, pulse 98 and respiration 22. The pulse was soft and markedly dicrotic, the abdomen slightly distended and showed a profuse rose rash. The spleen was slightly enlarged and the Widal reaction present. The urine averaged 30 oz. and on entrance contained a trace of albumen, no casts and showed sp. g. 1011.

His condition continued good until the 15th of January. The temperature had dropped the day after admission to 99 and gradually rose to 103 on the 14th, dropping again to 99 2-5 on the 15th. Coincident with this fall in temperature he had a slight convulsion, the first since his entrance, and during the next few days they recurred frequently until, on January 19th, patient was going from one into another. On a few occasions these were general with loss of consciousness, but the majority were local, beginning by contraction of left side of face, turning of face and eyes to left side, spasm frequently extending to left arm and sometimes to left leg and opposite side. The right pupil is contracted, but there is no enuresis nor biting of the tongue.

On the 19th, 4 days after the onset of the convulsions temperature and pulse began to rise and rough, later blowing, breathing and moist sounds were heard over the chest.

On the 22nd the temperature rose to 107, and death ensued. After the temperature reached 104 there were no further convulsions. The important features of the autopsy, which was performed by Dr. Gillies, were the presence of typhoid ulcers in various stages of healing, and bilateral broncho-pneumonia, the evident cause of death.

The other organs showed cloudy swelling and the heart was somewhat enlarged, some atheroma of the aorta existed and the kidneys showed a moderate grade of interstitial nephritis. The brain showed on both sides a depression over the lower part of the ascending frontal region.

To summarize:—

Case No. 1 presented hæmoglobinuria with jaundice, both indicating blood destruction; as well as marked parenchymatous change in all the organs, especially in the kidneys, culminating in an uræmic attack. The dyspnœa amounting to air hunger in this case was an interesting feature, and may be explained by the loss of the oxygen carrying power of the red corpuscles.

As to the frequency of hæmoglobinuria in typhoid, Osler in 1500 cases saw it once. One other case we have found reported by Musser and Kelly in 1901. Otherwise the great majority of writers are silent upon the subject.

Whether in this case it was due to the typhoid bacillus alone, in absence of a blood culture we are not prepared to say, but the case lately reported by Dr. Blackader of b. coli septicæmia with hæmoglobinæmia, might suggest that there was a mixed infection.

Case II with a general hæmorrhagic tendency shown by widespread purpuric eruption and bleeding from nose, mouth, stomach, kidneys, and bowels is more directly referable to a secondary infection and this is the history of the majority of cases of hæmorrhagic typhoid.

As to the time of onset of the hæmorrhagic manifestations, in most of the cases this has occurred after the second week, although rarely it is hæmorrhagic from the outset.

Gerente in a Paris thesis of 1883, reports 64 cases of erysipelas in 3910 cases of typhoid and states that it usually occurs after the 21st day.

The points of interest in the third case are, first the onset of convulsions in typhoid which in the Johns Hopkins' statistics occurred 8 times in 1500 cases; secondly, the absence of convulsions during the height of the fever and their reappearance as fever came down. This feature

has been mentioned by a number of writers. Also noteworthy is the fact that with a few exceptions the convulsions were sharply localized to the arm and face area.

This was also true of the uræmic attack in the hæmoglobinuria case. Of the cases of convulsions during typhoid which Osler quotes, two occurred at the onset, 4 from the toxæmia, one from thrombus of the middle cerebral and one from tuberculous meningitis. We have to acknowledge with thanks the kindness of Dr. Blackader in permitting us to report Case No. I from his wards, and thanks are due Dr. Fyshe and Dr. Tees for the clinical histories.

CEREBRAL TUMOUR SIMULATING A VASCULAR LESION.

BY

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The symptoms denoting the presence of a cerebral tumour are usually gradual in onset and progressive in character. Occasional exceptions are, however, observed, and the symptoms if of a sudden origin are usually due to a complicating vascular lesion, either hæmorrhage or thrombosis.

The object of the present communication is to call attention to a class of cases beginning with symptoms of hemiplegia or apoplexy which may completely mask the true nature of the malady. The following case is one in point.

Joseph L, æt. 47, stonecutter, was admitted to the Montreal General Hospital on April 1st, 1905, and died on May 25th. He complained of headache, weakness of the right arm and some difficulty in speaking. He cannot remember any previous illnesses, and denies having had venereal disease. He has smoked heavily, but was always a moderate drinker. His father died of rheumatism, while his mother and two of his children died of tuberculosis. The present illness came on during sleep. He went to bed feeling well and strong, and on the morning of March 15th he noticed weakness in the right arm and difficulty in speech. After keeping at work for eight days he was obliged to stop owing to inability to hold his tools.

Present condition.— The patient is a strongly built and well developed man. There is weakness of the right face and arm and slight difficulty in finding certain words. The gait is normal and the foot is not dragged.

On the right side the face shows flattening of the labio-nasal fold, the movements of the forehead are defective and the eye is not so

firmly closed as on the other side. He is unable to whistle, but emotional movements, such as laughing, are equal on both sides. The tongue is distinctly protruded to the right. The right arm can be raised only to the level of the shoulder or slightly above it, the grasp is very weak as are also the muscles of the wrist and elbow. Dynamometer right hand 0, left 40. The motor power in both legs is slightly diminished and apparently equally so. There is an entire absence of rigidity of the limbs, no ataxia and the sense of posture is normal. The knee jerks are slightly increased, especially the right, no ankle clonus. The abdominal and epigastric reflexes are absent on the right side, the other superficial reflexes are present.

Speech is somewhat defective. He mentions the names of most objects in French, sometimes in English. He can give his name, but not the number of his house. He understands everything that is said to him, but as he has never learned to read or write it is impossible to investigate his powers along these lines. Apart from emphysema the other organs are normal. The pulse during the first three days varied from 56 to 88, the temperature during the same period 96.8 to 98.6, the urine is normal, and at no time did it contain albumen or sugar.

During the first few days he complained of headache, but this was never severe and he always slept well. The face and arm became weaker and his mental condition showed progressive deterioration; he became very dull and lethargic with incontinence of urine and fæces. Motor asphasia became marked and ultimately he was unable to name any object, although he recognized their use. The leg began to show some weakness whilst ankle clonus and increased knee jerk developed, especialy on the right side. The leg eventually became extremely rigid. There were two attacks of irregular convulsive movements of the limbs. The pulse was frequently slow, 52 to 60, later it became increased in frequency. Vomiting was present on two occasions only. He ultimately passed into a comatose state with contracted pupils and rapid respiration, dying ten weeks after the first onset of symptoms. The eyes were examined by Dr. Kerry a month before death; the pupils were equal and active and the eye grounds normal.

Iodide of potash was administered in increasing doses, but had to be discontinued on account of a severe stomatitis which it set up.

Dr. B. D. Gillies, who performed the post-mortem examination, has kindly furnished the following report:

Anatomical diagnosis.—Tumor cerebri, patchy sclerosis aorta and coronary arteries: patent foramen ovale: chronic adhesive pleuritis

(right): broncho-pneumonia and abscess of the lung (left): chronic congestion of the liver: duodenal ulcer.

The brain, after removal of the dura, showed flattening of the convolutions in the third frontal, ascending frontal and parietal regions of the left hemisphere, also a slight reddening of the cortex over the third left frontal region. The pia was smooth and glistening throughout. The first temporal convolution is compressed by the bulging of the upper boundary of the Sylvian fissure.

On section after hardening the brain, a tumour was found extending from near the anterior end of the Sylvian fissure in the third frontal convolution backwards almost to the posterior end of the sulcus. The growth measured two inches from without in, and two and a quarter inches from before back. The edge is irregular and no definite capsule was evident except at the upper and anterior end of the tumour in the ascending frontal convolution, where it was immediately subcortical. Behind this level it merged with the grey matter of the cortex and came very close to the surface, especially in the tissues forming the roof of the Sylvian fissure. The inner border of the growth was ill-defined and extended in for two inches from its outer edge.

Several small dark brown hæmorrhagic areas were scattered through the growth. Microscopically, the growth proved to be a spindle-celled sarcoma.

The diagnosis on admission seemed to lie between hæmorrhage and syphilitic softening, the former being regarded as more probable. With the progress of the case neither of these hypotheses seemed quite satisfactory, but it seemed possible that a progressive specific arteritis with extending thrombosis of the vessels might account for the increasing paralysis and deepening torpor and lethargy.

The usual symptoms of cerebral tumour were absent. Headache, although present for a short time, was never severe or persistent; vomiting only occurred on two occasions, and optic neuritis was absent a month before death. Had more weight been laid on the gradually increasing stupor, on the slow development of paralysis and spasm in the leg and on the two convulsions, a more correct opinion might have been reached; the sudden onset, however, was so strongly in favour of a vascular origin that these symptoms did not secure sufficient consideration.

The localisation of the lesion offered less difficulty than its pathological character. A cortical condition was improbable owing to the absence of early Jacksonian attacks, whilst the fact that the leg escaped paralysis in the earlier stages suggested the subcortical region rather than the internal capsule as the most probable site.

In the light of the post-mortem examination the tumour must have been latent for some time, and the occurrence of hæmorrhage into its substance apparently caused sufficient enlargement to involve the motor fibres passing from the centres of the arm and face, thus accounting satisfactorily for the sudden paralytic symptoms.

The clinical course of most instances of cerebral tumour is marked by a slow and progressive advance of the symptoms. The occurrence of hæmorrhage or softening in the neighbourhood, or even of hæmorrhage in the substance of the growth itself, as in this case, is, however, marked by a sudden onset or exacerbation of a symptoms. Hemiplegia, accompanied in severe cases by loss of consciousness, ensues in precisely the same fashion as in ordinary form of rupture or occlusion of the cerebral vessels. Where evidence already exists of the presence of a neoplasm, the recognition of such cases is not usually a matter of difficulty. A history of preceding severe headache or the existence of optic neuritis would give the clue to the underlying condition.

The difficulty of recognizing the presence of tumour in cases of sudden onset is greatly enhanced when there is no previous history suggesting coarse disease, or when, from any reason such as unconsciousness, no history is forthcoming. Here the symptoms closely simulate those of ordinary hæmorrhage or softening.

Hæmorrhage, as might be expected, occurs in the more vascular forms of tumour, particularly in glioma, and may take place in the tumour itself or on the vascular layer at its periphery. In the latter case the extravasation is occasionally large, and may even rupture into and flood the ventricles. Cerebral softening is frequently found at the surface of new growths as the result of pressure, or it may follow occlusion of vessels from pressure or by invasion of the lumen of the vessel by a neoplasm. In the case of syphilomata concurrent disease of the vessels is often found.

The onset of such cases is commonly marked by paralytic symptoms, but in the case of extensive hæmorrhage or even of softening, the clinical picture may be that of apoplexy. Hughlings Jackson records an instance of a patient brought to hospital comatose in whom the diagnosis of apoplexy was made. The autopsy revealed a hæmorrhage into the lateral ventricles originating from an adjacent tumour. A parallel instance is related by Martin in which the terminal symptoms were due to softening The patient, after being confined in an asylum for some years, became rapidly unconscious, there was a doubtful paralysis of the right side and the right pupil was dilated. The autopsy revealed a tumour the size of a hen's egg in the right hemisphere,

forming the roof and part of the outer wall of the ventricle and pressing on the optic thalamus. There was softening of the basal ganglia and of part of the right hemisphere. West and Banks have recorded somewhat similar instances.

Bouveret, in recording two cases of sudden onset of paralysis in cerebral tumour, associated in one case with hæmorrhage, in the other with softening, remarks on the recurrent character of the attack, within a period of a few days or weeks. Although such a course is not unknown in ordinary hemiplegia, it is certainly unusual to find the attack following another at such short intervals, and this writer is apparently inclined to regard such occurrences as suggestive of latent tumour.

That paralysis of sudden onset in cases of cerebral tumour is not invariably due to vascular lesion is shown by two cases recorded by Gowers. Post-mortem examination failed to reveal any indication of hæmorrhage or softening in either of these instances. Gowers suggests that inhibition of the motor area is responsible for the symptoms, and he regards them as analogous to the sudden occurrence of a convulsion during the course of the disease.

The occurrence of hæmorrhage or softening associated with cerebral tumour must be regarded as a grave symptom. Should the patient survive the immediate effects of the attack, recurrence as shown by Bouveret's cases is apt to take place. The fatal issue is frequently precipitated by either of these accidents, and of the cases above referred to all proved fatal within a period of ten weeks.

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NOTES ON MALARIA AND ITS TRANSMISSION.

BY

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In offering the following notes for publication, the writer wishes to state at the outset that he does not purpose offering a comprehensive article on malaria, either historically, clinically or otherwise. The

purpose of the article is simply to draw attention to certain features of the disease observed during a four-year residence in the malarial districts of Mexico, which, in the writer's judgment, do not receive the attention in the standard works on medicine to which their relative importance entitles them.

Briefly stated, the clinical picture of acute malaria, as usually described, is that of an intermittent fever of sudden onset, preceded by headache, weakness, pains in the back and limbs, anorexia and general malaise; and accompanied by a chill, vomiting, sweating, diarrhœa, pains in the liver and spleen, with some enlargement of these organs. Although these undoubtedly constitute the main symptoms of a clearly defined case of malarial fever, it soon becomes evident to a physician practising in a malarial district that there is a very large number of cases that do not conform to this picture of the disease, so large indeed that the exceptions in some districts seem to predominate; and it is more particularly to these atypical cases that attention is directed in this paper.

Most writers in defining the disease regard fever as an essential; but, if we regard the presence of the hæmamœba as diagnostic of the disease, a "dormant" or "latent" malaria exists with no clearly defined subjective symptoms whatever, and "malarial fever" is but one of the later symptoms of malaria, and may or may not be present, as in the following cases.

Case I.— Office boy, age 13, was used as a subject for a blood count performed with no particular object other than practice. The corpuscles under $\frac{1}{6}$ objective were noticed to be irregular in outline and granular. On examination with the oil-immersion a very large number of corpuscles were observed infected with plasmodium of malaria. On questioning and examining the patient and taking pulse and temperature nothing abnormal was found except a slightly enlarged spleen.

Case II.—Labouring man, age 22, strong and active. Blood was extracted from his ear for the purpose of demonstrating the appearance of normal blood, and the difference between it and another sample infected with the malarial parasite. Several infected corpuscles were observed in the field. The patient give no subjective or objective symptoms or physical signs other than the blood condition.

Six other apparently healthy cases were selected indiscriminately, as they came for vaccination, and were similarly examined, and the parasite found in small numbers in all.

Not only do we find cases responding to a microscopical diagnosis of malaria, but with none of the typical subjective symptoms of the

disease, but we find many others with but one or two obscure symptoms, as in the following case.

Case III.—Young man, age 27. Had suffered from neuralgia of small occipital nerve of right side for four years, coming on at intervals of from seven to fifteen days, and accompanied by anorexia, flushed face and slightly congested eyes. Pain was aggravated in the recumbent position and was diagnosed at first as "congestive" headache. The neuralgia did not respond permanently to local or constitutional treatment. The blood was tested first by the hæmatocrit and found slightly anæmic for an altitude of over 5,000 feet, viz., 4,500,000. The patient was put on iron. In about one month a microscopical blood count was made to determine the result of treatment, and the blood accidently found to be infected with the malarial parasite. Permanent relief followed promptly the administration of quinine.

Malaria in Children.

If in adults we meet with many atypical cases of malaria, in children we do so, I believe, with even greater frequency, as in them the three stages of the paroxysm are rarely so well defined as in the adult.

The cold stage in children is quite rare, especially in the hot climates; and when present usually partakes more of the appearance of a mild degree of collapse than of that of a distinct chill. Well marked trembling is exceeding rare in young children. The sweating stage is less pronounced in the higher than in the lower altitudes. Bronchitis and diarrhœa, however, are quite constant in patients under five years of age, and, with the fever, I consider, constitute the three most valuable symptoms for the diagnosis of malaria in children. The importance of bronchitis in leading the physician to suspect malaria is, I believe, greatly underestimated, especially in children in the higher altitudes, where they are subject to more extreme moisture and temperature. I am aware that the existence of malarial bronchitis, like that of malarial neuralgia, etc., is questioned by some authors, but I have thoroughly convinced myself that they occur — the former with some degree of frequency, at least under such climatic conditions as existed where I was located. Probably the bronchial mucous membrane is not the seat of any special invasion by the malarial organism, but, as it is undoubtedly a channel for the elimination of many drugs and other foreign constituents of the blood. I can see no logical reason why the toxins of the sporulating parasites, which cause such intense chills and fevers, can not be eliminated in part through the same channel; and, in conjunction with the sudden changes in temperature,

cause an inflammation of the bronchial mucous membrane. As demonstrating the existence of bronchitis in malarial fever of children, let me cite the following case. (Also see *Case V.*)

Case IV.—Baby, age 3 months, was brought to my consulting room late at night, suffering from urgent dyspnœa, severe cough, hoarseness, nasal catarrh and diarrhœa. The child was very pale, almost collapsed, with cool skin, pinched face, dim eyes, rapid pulse and rectal temperature of 104.8° F. The coughing was croupous and almost continuous while in the office. On examination, the pharynx and tonsils were badly inflamed, but no membrane was visible. An examination of the chest made me suspect the possible onset of capillary bronchitis following upon the throat condition. So completely did the bronchial symptoms dominate the scene, that I began preparations for taking cultures from the throat, and for the administration of diphtheritic antitoxine. Remembering, however, many cases of milder malarial bronchitis encountered previously, I decided to examine the blood first; and, somewhat to my surprise, found it intensely infected with hæmamœba in the sporulating stage. The child was put on given doses of quinine three times a day, and made a rapid and complete recovery, the fever disappearing in two days, and the cough in six.

Upon the recognition of such cases as the above depends, not only the successful treatment of the bronchitis, but, what is more important, of the disease of which it is but a symptom.

Transmission of Malaria.

A physician practising in a low tropical climate, where malaria is very prevalent, soon appreciates the fact, now definitely proven, that the mosquito Anopheles is the all-important agent in the spread of this disease. That it is the only one I have been led to doubt by the following cases which came under my observation. I may state here that, after spending some time in the hot malarial districts on the west coast of Mexico, I changed my place of residence to the town of Topia, situated back further in the mountains at an elevation of 5,400 feet above sea level, but only a short distance from the malarial district and having considerable commercial intercourse with it. Malaria was quite prevalent in Topia, especially in the spring and fall, among people who, at some date had resided on the coast. Mosquitoes, however, were quite rare; so rare, indeed, that I do not recall having been bitten by one during my residence in that place. Shortly after my arrival I attended a woman at her confinement, and, about three months later, was called in to treat the child, which had the following history.

Case V.—Child, aged about three months. Was attacked by low fever, ranging from 100° F. in morning to 102° in afternoon. Onset was slow and accompanied by bronchitis. After making the usual examination, I diagnosed it as a case of catarrhal bronchitis. Patient was put on cough-fever mixture. No improvement followed. Having to leave town for about ten days, the child was left in charge of another physician. On my return it had fallen off considerably in weight, and the cough and fever were much the same. The medicine was changed, but with no benefit. A consultation was held, and all the probable causes of the fever and bronchial conditions discussed and searched for. Malaria was suggested, but was not considered possible in view of the high altitude, absence of mosquitoes, and our absolute knowledge of the child never having been out of the town at an elevation of 5,400 feet. After four or five days more the fever, which had never been normal during any of my calls, gradually assumed a slightly tertian type, and the clinical diagnosis of malaria was forced upon me. Prompt recovery followed small doses of quinine.

I record this case, as it was the first to arouse my suspicion that, in a few cases at least, other agents than the mosquito are instrumental in the spread of the disease. In watching for other such cases as confirmatory evidence, I have collected to date five more cases in infants, whose date of birth I knew, and who, to my positive knowledge, had never been out of the town where they were born. These five cases were all diagnosed microscopically.

In searching for the agent at work in the transmission of malaria from infected persons to these uninfected children, I noticed that the outbreak of malaria in the spring followed closely the date at which the fleas — which here constitute a veritable pest — became troublesome. My suspicions were directed to them, and with the hope of determining whether they were a factor, I undertook the following small experiment.

Several fleas (culex serraciceus) were procured from a dog, and, after being kept in a glass beaker for some time, one was placed under a watch glass on the forearm of a malarial patient. The flea was afterwards killed, the blood extracted from the stomach and examined with the oil-immersion. Several corpuscles were seen containing the same type of parasite as was found in the patient's blood, and in the same stage of development. The experiment was repeated several times, and free spores also were found. This experiment is not positive proof that the flea is capable of inoculating an uninfected person with the disease, but it is, at least, suggestive; and, taken in conjunction with the clinical evidence, seems to point to the flea as one of the probable

agents in the transmission of malaria. The actual inoculation of the disease by the flea to an uninfected person, to eliminate all doubt, would require the infected insect to be taken to an uninfected district, and there to inoculate an uninfected person. If kept without food, the parasite rarely survives twelve hours; and I have not succeeded as yet in devising any artificial medium on which its life could be maintained the necessary period of time.

Diagnosis of Malaria.

Upon young physicians intending to practice in malarial districts, I would impress the oft repeated advice to use the microscope in all obscure cases where even a suspicion of malaria can exist; at the same time watching for other diseases as complications, which, fortunately, are rare. The microscope is probably of more practical service in the diagnosis of malaria than of any other single disease, rendering it simple and prompt, and clearing up many obscure cases which otherwise would almost certainly be overlooked. Its frequent neglect is difficult to understand.

A convenient method is to carry continually a small pocket box containing cover glasses, and a small spear shaped pocket lance, the most convenient blade probably being ⅛ inch long and provided with a shoulder to prevent it entering too far on being quickly inserted.

The most convenient points from which to take the blood are probably the lobe of the ear or the forearm, as they are quite insensitive. The finger tips should be avoided, as they are excessively sensitive, and the pain may persist for a day or two. What I believe to be a very convenient and practical procedure is to take quickly but a very small quantity of blood, and that the very first that flows, as I believe it contains a much larger percentage of affected corpuscles than that which comes after. I never wish the blood to be sufficient to cover half the area of the cover-glass. If the examination is made during a chill, it should be made quickly, as the blood soon coagulates. In searching the field, the few number of rouleaux and the shattered corpuscles frequently seen serve to make the diagnosis probable even before encountering the spores or the corpuscles containing the parasite.

Treatment.

Nothing of interest is to be added here. Removal to high altitude, large doses of quinine, with milk diet while the fever persists, and the avoidance of constipation throughout, constitute all that is necessary in most acute cases. In children, or in adults with vomiting, the hypodermic method is very satisfactory. In the chronic form, change

of climate, a liberal diet, fresh air and such tonics and hæmatinics as quinine, strychnine, arsenic and iron probably give the best results. Residence for a year or so in the north is frequently followed by good results. It should always be borne in mind, however, that a few days' treatment, although it may check the fever, never eliminates the disease. Blood examinations reveal the presence of the parasite even after the administration of quinine for weeks.

Resumé.

In conclusion, I would like to emphasize the following:—

1. The large proportion of atypical and obscure cases of malaria met with in malarial districts.
2. That any one or all the subjective symptoms may be absent, and the patient be a malarial subject.
3. That in malarial districts the large majority of the population have the parasite in the blood.
4. That in children, fever, diarrhœa and *cough* are the three chief symptoms of malaria, the chill and sweating stage being rarely present.
5. That the mosquito Anopheles is probably not the sole agent in the transmission of the disease.
6. The constant use of the microscope for diagnostic purposes.
7. Prolonged treatment.

A CASE OF EPIDEMIC MENINGITIS OF TWENTY HOURS' DURATION.

BY

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Epidemic cerebrospinal meningitis is at times a disease of terribly fulminant character, but I have not happened to find in the literature a more rapidly fatal case than is here recorded.

In the autumn of 1905, there came to the Royal Victoria Hospital in one week, three cases from the same house on St. Dominique Street; the three cases were not related, as far as I know, but lived under the same roof; one was a child of tender years, who died after a few days illness, the second was a man of 30, who recovered from the intense symptoms of the acute attack, but died of chronic meningitis, with extreme emaciation, eight weeks later. The subject of this case report was the third. He was a foreigner and had excellent health

up to the onset of the illness; the evening preceding his death he attended a dance or some such festivity; went to his work at eight o'clock in the morning, felt his head ache at eight-thirty, had a chill at nine, by five o'clock was wildly delirious, was comatose at one-thirty the following morning, and dead at four-thirty, twenty hours after the onset of the first symptom. Before describing this case more fully, it may be said that the cases were reported to the Health authorities, and this focus of infection was responsible for no further outbreak.

L. V., aged 23, a labourer, on the morning on which he was taken ill, ate a good breakfast and began his work at 8 o'clock; at 8.30 o'clock headache began, which rapidly became more severe; at 9 o'clock he became feverish and had a severe chill; by his friend's statements, which were indefinite, his fever increased during the day, and by evening he was delirious. On admission, about midnight, he was wildly delirious, required restraint, and was evidently hyperæsthetic, as he resented being touched; pupils equal, contracted; face cyanotic, and a petechial rash was present on the forehead, and becoming evident on the chest and legs. At 3 a.m. delirium gave way to coma; temperature 104°, pulse 106, weak, embryocardiac. Eyes react to light, knee-jerk just obtained, no Kernig sign; after the onset of coma, the purpura could be observed to increase on the body under observation, and new spots would apear on an outlined area, while one watched it; cyanosis rapidly deepened. Lumbar puncture showed no excess of pressure, and yielded turbid fluid, which was incredibly rich in intra- and extra-cellular diplococci, negative to Gram (meningococci), the field resembling a smear made from a culture tube in the numbers of the organism. A diagnosis of acute epidemic cerebro-spinal meningitis was made, and the patient died twenty hours after the first onset of symptoms.

The autopsy was performed seven hours after death. Body rigid, muscular, livid, except where pressure was exerted, where it was pallid; conjunctivæ hæmorrhagic, pupils half-way between the dilated and the contracted state, equal; the face and front of body and limbs showed a purpuric eruption, the largest petechiæ being 3 mm. diameter; a dozen such could be counted in a square inch, with others less bright as a background; comparatively few existed on the back. Inguinal and axillary glands were palpable.

The dura was greatly injected, and the pia over both hemispheres similarly so; smears showed very abundant intracellular and free meningococci. There was similar injection over the base, but no naked eye appearances of suppuration anywhere; the brain, itself, showed

marked congestion, but nothing else. The ethmoidal sinuses and upper nasal passages were dry, and showed no signs of inflammation.

The pharynx, larynx and trachea were intensely congested, as were the bronchi. There was œdema of the lungs, no consolidation, and obsolete tuberculous nodules were present.

The pericardium contained 20 cc. of turbid blood stained fluid, and many petechial haemorrhages were seen in the epicardial surface. The heart muscle showed cloudy swelling, and the blood was very fluid, clots being absent. Slight fatty change of the aortic intima was observed. The recti muscles and the pectorals were cloudy; the coils of intestine showed numerous petechiæ.

The stomach mucosa was dusky, œdematous, and showed many submucosal haemorrhages. The liver lobules were indistinguishable, the organ cloudy. The spleen was small, weighed 165 grms., firm on section, dark red in colour. The kidneys were dark red, swollen, almost bloody. The entire bladder wall was dusky, with four small haemorrhages. Small haemorrhages were found in the substance of the testes.

This microscopic examination of the tissues yielded nothing of note in addition to the above. Smears made at the autopsy, in addition to those mentioned previously, showed *meningococci* in the pericardium, none in the urine, although bacilli were here present. Cultures from the ethmoidal cells gave meningococci, streptococci and a bacillus, not identified; from the meninges, meningococci; from the heart-blood, meningococci; from the pericardium, liver, spleen and gall bladder, no growth; from the bladder, mixed bacilli.

In this autopsy, one is struck by the fact that we are dealing, not so much with a meningitis as with a septicæmia; the existence of the meningococcus in the heart-blood and pericardium, indicates a wide distribution of the organism, and, were it not for the microscopical discovery of the specific germ, the naked eye appearances are those of a septicæmia, and the description might answer for an acute septic injection of any kind—save, perhaps, with the exception of the spleen. In this, however, is nothing remarkable; it is scarcely worthy of note, save that the septicæmia is often lost from sight in the local manifestations of the presence of the meningococcus.

The most remarkable feature of the case, apart from its startling rapidity of progress, seemed to me the appearance of the smears from the fluid obtained by lumbar puncture; so rich was this in meningococci, that the microscope field suggested not so much a cerebro-spinal fluid, as a drop of very richly infected gonorrhœal pus; it is not any exaggeration to say that a 1-12 oil-immersion field would show many dozens, perhaps, even hundreds, of the organisms.

OSTEOMALACIA ASSOCIATED WITH LIPÆMIA.

BY

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The following two cases though incomplete in their study are of such interest as to merit a report of them. It is regrettable that as the condition of lipæmia was not recognized during life, we are unable to link the *intra vitam* findings with those obtained at post mortem; and, moreover, that the qualitative blood examinations are wanting in each case.

At the present time the question of fat absorption and fat destruction is occupying a prominent place among the subjects of research, and recent findings go more and more to prove that the transformation and transportation of fat in the various parts of the body follows common chemical laws; that is, that the process of absorption from the intestinal canal into the blood stream differs but little from the fat absorption at the natural fat depots of the body; each being the result of enzyme action. And so too it has been shown that fat emboli, so called, which are so common in the lungs after injury, are of little consequence there as they become absorbed by the lipases of the blood thus again freeing the blood vessels. However, it is still a debatable question whether the kidneys are able to excrete fat, and the manner in which fat is secreted by the mammary glands is also undetermined.

Cases of lipæmia have not been uncommon in association with diabetes, and diseases of the pancreas; in neither of our cases, however, was there true diabetes present, though the first one showed the presence of small quantities of sugar in the urine just before death.

History of Case I.—J, female, aged 24. From the service of Drs. Garrow and Archibald. The patient had been in hospital previously for osteomalacia and genu varum, and during her stay developed erysipelas. She was discharged on April 8th, 1905. After returning home she remained fairly well up to May 12th, when she developed a severe pain in the right side; this pain continued to increase in intensity. Previous to onset of pain she had some diarrhœa, which was not very severe. On May 15th she had some difficulty of micturition. She vomited only once. On admission patient was suffering very great pain, referred to the right side. Examination of the abdomen showed no tenderness or rigidity on left side, but these signs were present on the right. There was some fulness of the abdomen which extended from the umbilicus towards the antero-superior spine, and in this region a large and somewhat round mass could be

palpated. An operation was undertaken and the abdomen opened over the appendix. A large globular cyst-like mass was exposed, and free pus escaped from it. Numerous adhesions were encountered in the pelvis, and the mass was made out to be a pus cavity in the broad ligament. The uterus was noted to be of infantile character. Total ablation of the broad ligament on the right side was performed. Patient stood the operation fairly well, but was very weak. For four days the patient's condition remained about the same. On May 20th (five days after operation) vomiting became faecal in character. There was heavy albumen in the urine and hyaline casts. For the next three days the faecal vomiting continued, and the abdominal wound showed absolutely no attempt at repair. There was no evidence of peritonitis. May 26th. Patient had been gradually sinking, and appeared irrational at times. Towards the evning she became comatose, but regained consciousness shortly afterwards. While conscious she was quite noisy. At midnight patient was seized with a severe convulsion resembling that of a uræmic condition. Between the convulsive attacks she regained consciousness. During the night she had some twelve convulsions, and died at 10.10 the following morning.

Autopsy performed by Drs. Adami and McCrae.

At autopsy was found the body of a rather dwarfed girl with a small barrel-shaped chest. The left leg had a marked bending of the femur with the convexity outwards. There was a posterior bending of both tibiæ, and left lateral scoliosis in the lumbar region. It was noted on removing the skull, as also in cutting the other bones that the bone cut easily, and could be pared with a knife. The pelvis was a marked example of osteomalacia; the rami of the pubes joined at a very acute angle, so that 5 cm. from the symphysis they were only 2.75 cm. apart; the transverse measurement of the brim was 8.5 cm. The long bones were found to be composed of only a shell of bone on the outside with a honeycombed structure immediately within this, and containing a soft pulpy marrow. The ribs have a very marked amount of spongy tissue surrounded by a thin shell of bone while they and the spinal vertebræ can be cut with moderate ease with a knife. Of the general organs in the body the kidney showed a condition of chronic parenchymatous nephritis while a local septic peritonitis was also present.

Anatomical diagnosis.—Right salpingo-oophorectomy: acute localised septic peritonitis; chronic parenchymatous nephritis; osteomalacia; uræmic ulceration of œsophagus and jejunum; acute catarrhal gastro-enteritis; pulmonary apoplexy; lipæmia, uremia (?).

In the microscopical examination the following conditions were noted:

Lung.—The vessels of the lung were found to be loaded with fat staining material. However, it was not universally seen that the alveoli are bounded by capillaries loaded with fat. The walls of the blood vessels, too, were noted to contain fat in minute granules, which lie both in the endothelial and connective tissue cells of the vessel walls.

Liver (Sudan III and Hæmatoxylin).—Showed an extremely interesting condition in that the lobules are picked out by the Sudan in the peripheries, the central vein and its neighbourhood being entirely free from fat. This fat was present within the liver cells themselves, there being little or none found free in the capillaries. The hepatic artery showed little fat within it. Many of the bile ducts were seen with their cells containing fat granules both at their periphery and towards the protoplasm adjoining the lumina. The larger portal vessels too contain some fat. The liver cells are seen to contain fat in minute granules which do not seem to coalesce readily.

Heart muscle.—There is fatty degeneration of the individual muscle fibres with a considerable quantity of fat in the small capillaries and present in and about the cells of the larger blood vessels.

Kidney.—Fat is found in the capillaries of the Malpighian tufts and besides this in the convoluted tubules. Many of the epithelial cells of the convoluted tubules were seen to be desquamated, having their substance densely infiltrated with fat. The straight tubules too showed a fatty change, in that fat droplets were seen in the base of the cells.

Spleen.—The vessels showed a considerable quantity of fat within them, and the cells also contained the fine granules of fat.

Case II.—F. B., æt. 24. From the service of Dr. W. F. Hamilton. Patient was in usual health on May 14, 1906, and went to bed feeling quite well. At midnight he was found by the people in the house unconscious and rigid. He had evidently fallen out of bed. He soon regained consciousness and complained of soreness in the muscles of his arms. Between midnight and 10 a.m. the following morning he had three convulsive seizures, regaining consciousness in the intervals. Since 11 a.m. he has remained unconscious. Patient was born in England and had been in Canada about a year. He has always been a delicate child and suffered from frequent attacks of nausea and vomiting. He has had indefinite pains in the legs which would become stiff, causing a spastic gait. He had difficulty in raising himself after stooping. This stiffness and pain of the legs extended into the arms. He is an excessive smoker but does not use alcohol. On admission to hospital his breathing was quiet and regular. Thorax showed nothing unusual. Hæmoglobin amounted to 55 per

cent.; leucocytes, 20,000. There is a marked genu valgum recurvatum of the right knee. Patient became comatose and could not be roused. On 16th May, 1906, he had ten convulsive seizures up to 4.30 a.m., when they began to increase in depth; his right arm became rigid and wrists flexed. There was no frothing of the mouth, nor biting of the tongue. There had been Cheyne-Stokes breathing since 7 a.m. Patient died at 11 a.m. Some albumen and casts were found in the urine, but no sugar or blood.

An autopsy was performed by Drs. McCrae and Klotz.

At post-mortem was found the body of a young man of medium stature in whom the shoulders were apparently large, elevated looking, not unlike an upward dislocation of the humeri. The legs were bowed backwards and showed the condition of genu valgum recurvatum The skull cap was rather thin and cut readily, and when removed the calvarium seemed to be mostly made up of diploë. The right humerus had the greater tuberosity fractured, and a shell of bone about the size of a 50 cent piece lay displaced on it. The surgical neck of the bone, too, was broken with some displacement upward of the upper fragment. The medulla of the shaft of the humerus was very pulpy, and was converted almost entirely into red marrow, there being only faint streakings of yellow marrow remaining in it. The left humeri was completely broken through at the surgical neck where the compact bone existed only as a thin shell. With a little force the shaft could be fractured in new places. At the sites of the original fracture of the humeri there was found blood infiltration of the muscle and surrounding loose tissue, denoting the recent occurrence of the lesions. The vertebræ were soft and could everywhere be cut with a knife. The bent tibiæ showed nothing further beyond the bending of the bone and the characters of the thinning of the compact tissue and transformation of the marrow as noted in the humeri.

Frozen sections of the different organs stained with hæmatoxylin and Sudan presented very interesting features.

In the lung a great amount of fat was found in the small capillaries bounding the alveoli and appearing as if these vessels were plugged. The fat existed in one continuous mass, passing from the larger to the smaller vessels. A condition of isolated plugging of vessels by means of fat at their bifuracation was not seen. In some instances the fat could still be recognized in very minute and sand-like droplets. The kidney had the capillaries of the cortex and median zone filled with fat, the Malpighian tufts having their capillaries distinctly defined by the Sudan stain within them. The larger vessels of the kidney also

showed fat in their lumina. The parenchymal cells of the cortex were in a state of fatty degeneration, particularly to be noted in the convoluted and collecting tubules.

Anatomical diagnosis.—Osteomalacia, chronic mixed nephritis, lipæmia, cloudy swelling of liver and kidneys, fracture of both humeri with hæmorrhage into muscles, genu valgum recurvatum, uræmia (?).

The chief interest in the above two cases is the association of osteomalacia with lipæmia. The condition of osteomalacia extended through the entire osseous system—as far as could be examined. The vertebræ and skull in both cases were markedly affected, while in Case II the long bones were also severely involved in the disease, so that spontaneous fracture occurred in the humeri.

In each of the above cases the occurrence of the excess fat in the blood, is with difficulty coupled as a complication or process of the osteomalacia, as in each case there was present another condition, which, although small in itself, must not be overlooked. We had in the first case the presence of sugar in the urine, arising shortly before death. Small as was the amount of sugar which was present, the fact cannot be entirely outlawed, on account of the frequent occurrence of excess fat in the blood in diabetes.

In Case II we had the presence of spontaneous fracture of both humeri which might be held to account for the fat found in the capillaries of all the organs. However, the distribution of the fat in the organs does not support the contention that a large quantity of fat was suddenly thrown into the circulation of the occurrence of spontaneous fracture. Had this been the case we should have expected to find the greater quantity of fat lodged in the lungs, instead of being fairly uniformly present n all the vessels.

It has been shown experimentally that large quantities of fat thrown into the venous system lead to a blocking of the radicles of the pulmonary artery, with a consequent respiratory death. At the same time it is the frequent finding at the post mortem table to note the presence of fat in the vessels of the lung after all fractures and severe injuries of bone. Usually, however, when death follows such an injury the lungs are the only seat of the fat deposit. In Case II where the patient died within a short time after the fracture of the humeri, we would not expect to find the large quantity and the wide distribution of the fat.

Similarly in Case I. I know of no reported case in which, with the small quantity of sugar present in the urine, and occurring only a few hours before death, there has been an excess of fat found

in the blood. Nor are we justified in speaking of the fat deposits seen in the capillaries after death, as emboli, for in no organ is there the end result of an embolus,—an infarct. The wide distribution of the fat in the blood gives us clearly the picture of lipæmia.

Quite recently Turney and Dudgeon reported a case of diabetes in a female aged 35, in whom the disease had been existing eighteen months. Nothing unusual was noted in the course of the diabetes until the eyes were examined. The condition of the fundi which were alike was striking. The discs were pale, the vessels were filled with a milky fluid instead of blood. The patient did not complain of her sight. On examination of the blood it was found that there was a remarkable quantity of fat present in it. The interesting feature of this case is that although much of the blood was replaced by free fat, the condition did not produce any untoward symptoms. This agrees with the observations of Fischer, who reported a most extreme case of lipæmia in a diabetic patient. During life the blood appeared as a milky fluid, and Fischer found that the fat was present as very minute particles, smaller than red blood cells, so that no interference was encountered in the capillary circulation. Fischer also noted that it was only after the death of the patient that the fat particles ran together to form larger globules. It was these larger globules that gave the appearance of fat emboli in the vessels.

The condition of true lipæmia can be reproduced in animals without producing in them any such symptoms as are encountered in pulmonary embolism. The best emulsion of fat which we can use in the experiment is milk, which can be inoculated into the veins of rabbits until the circulating blood holds an appreciable quantity of fat, without producing any serious effects in the animal. As was said above, the inoculation of the pure fat, containing sufficient olein to make it liquid at body temperature, into the veins, produces quite different symptoms from those produced by milk. In the former where the fat already exists in larger and smaller globules, the vessels of the lungs become rapidly plugged, and, moreover, the cohesion of the fat to the walls of the blood vessels helps in sealing off the small arteries. In these experiments it is found that little fat reaches the general circulation, almost the entire quantity being held in the lung capillaries. Should death not occur, after the inoculation of fat, the emboli are slowly dissolved by the lipase of the blood, besides being broken up into smaller globules by the endothelial and connective tissue cells growing into them. Wuttig found that these cells extended long processes into the fat masses and tended to reduce them into smaller particles.

The observation of Fischer, that the fat emulsion as is present in lipæmia, only tends to coalesce into larger fat masses after death, is an interesting one. It would seem that the fat diaplets are protected by a coating which keeps them from running together, and most likely the coating consists of a layer of fatty acids or soaps or their compounds with the proteid.

Under the general heading of osteomalacia a number of different diseases have been listed. Among these, Schönberger, Grawitz, Marchand and others have described a form in which the bone changes appeared secondary to a diseased condition (tumour) of the medulla of the long bones. In Schönberger's case, the tumour masses had a predilection for the bony structures and were distributed sporadically in the different bones. The histological examination of cases showed the tumour masses to consist of giant-celled sarcoma.

Such cases of tumour invasion in the bones, with secondary rarefaction of the osseous tissue are to be differentiated from the true osteomalacia which is primary in the bones. In the former cases the osteomalacia is limited to the region of the tumour growth, in the latter the entire skeleton is involved.

The true osteomalacia occurs most frequently in young women during or after pregnancy, and it is apt to begin in the bones of the pelvis, where it remains the most marked. Successive pregnancies in these cases aggravate the condition, so that the whole skeleton is converted into a non-calcified flexible,—in other cases fragile, tissue. The non-puerperal form is noted most frequently in the vertebræ and thorax, spreading then to the extremities and finally to the cranial bones.

The incidence of the disease is practically limited to certain geographical areas; in Germany, in particular, it is confined to the basin of the Rhine (Ziegler).

Eisenhart found that the alkalinity of the blood was reduced in osteomalacia, while v. Recklinghausen placed more stress on some vascular derangement of the bones. It has been held, too, by some that the loss of the lime salts in osteomalacia is consequent upon the formation of excessive lactic and carbonic acids in the bone tissue. There appears to be something in common between osteomalacia and rickets, as in each the non-calcification of osteoid tissue is a prominent feature.

In the cases here reported, we have an example of each of the two forms of osteomalacia. In the first case the framework of the bones was abundant, but was lacking in calcium salts; in the second case there was no such deficiency of lime, but the trabecular framework was scanty. In each case, however, red marrow could be squeezed from

the different long bones. and they had the common feature of being both associated with lipæmia.

Another interesting feature which, however, in both of our cases remains unexplained, is the occurrence of convulsions just before death. Whether these were the result of uræmic intoxication or some blood dyscrasias connected with the osteomalacia, cannot be said.

CEREBRAL COMPLICATIONS SECONDARY TO NASAL DISEASE.

BY

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During the past decade considerable attention has been devoted to the study of meningitis and cerebral disease as secondary to inflammation of the nose and its accessory cavities. Dreyfuss, Zuckerkandl and others have done much original and scientific work in this connection and a consideration of the subject may, I venture to hope, prove interesting.

Undoubtedly meningeal complications are much more frequent following aural disease as compared with intracranial complications secondary to nasal suppuration, but many cases of meningeal involvement as a result of nasal disease are overlooked, and if an earlier diagnosis of the nasal trouble had been made possibly aural suppuration would be much less frequent, as the majority of otitides are secondary to nasal or naso-pharyngeal inflammations. When one considers the complex and intricate formation of the nose, with its accessory cavities exposed to atmospheric changes and particularly in our climate where the four seasons are sometimes represented in twenty-four hours, one can readily understand why the resisting power of the nasal tissues should be lowered and the tendency to bacterial invasion, and as a result frequent subsequent purulent inflammation follows. The pathological changes, which one observes in the meninges or brain substance as a result of extension of infection from one or more of the nasal cavities, will depend upon the virulence of the micro-organism, and the situation of the source of the infection, namely, whether it originated from the frontal, ethmoidal, maxillary or sphenoidal cavities. Hajek has pointed out that experience demonstrates that a slight inflammation of one or more of the cavities often shows a particular tendency to involve the

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meninges or cerebrum; yet, on the other hand, closed empyema may exist for years without affecting the meninges, and, therefore, besides the cause of the infection there are certain predisposing factors which must be considered.

(1.) Congenital defective formation in the bony walls of the nasal cavities.

(2.) Partial or complete closure of the normal apertures of the cavities.

(3.) Pronounced virulence of the infectious bacteria.

There can be no doubt that many inflammatory products of the nose are carried to the meninges by the nasal veins which anastamose with those of the dura mater. Zuckerkandl demonstrated by injecting a fluid into the superior longitudinal sinus immediately above the frontal cavities that the veins and mucous membrane of the frontal cavities and those leading into the foramen cæcum, as well as those of the superior half of the nose, were filled with fluid injected from above. The anterior and posterior ethmoidal veins empty into the superior longitudinal sinus usually directly, at other times they enter the meninges through the superior ophthalmic veins, and less frequently through the inferior ophthalmic. There is, also, a vein which passes through the lamina cribrosa and enters into the superior longitudinal sinus, or into the veins of the olfactory tract. Schafer and Thane state that "coloured fluids can be made to pass from the subarachnoid space through the arachnoid villi into the prolongations of the subdural space which surround those villi within the venous sinuses and lacunæ and thence into the sinuses themselves." Therefore, if the cavernous and longitudinal sinuses, and particularly the former, are not filled with the normal quantity of blood there will be a lessened amount of cerebro-spinal fluid in the subdural space and other lympathic spaces of the cerebrum. This view which I advanced five years ago I will endeavour later to show is practical, and will help to explain some intracranial symptoms referable to nasal obstruction.

The Nasal Etiology of Cerebro-Spinal Meningitis.

Weigert was the first to demonstrate by a bony section of the nose from a case of cerebro-spinal meningitis that the superior half of the nose and its cavities presented intense inflammatory changes. Weichselbaum confirmed, or supplemented, Weigert's investigations by making sections of the nose in ten cases which had died from cerebro-spinal meningitis; out of this number the cavities in five were diseased. Cultures of pus from the meninges and nasal cavities revealed the presence

of the Diplococcus pneumoniæ and other pus producing bacilli, such as the Staphylococcus aureus and Streptococcus pyogenes, as well as the Diplococcus intracelularis. The Diplococcus pneumoniæ has been frequently found in pure cultures in such cases.

In a recent paper published by Weichselbaum he states that his earlier observations, in connection with this disease, have been confirmed by subsequent original investigations, namely, that the most frequent micro-organism found in cases of cerebro-spinal meningitis is the Diplococcus intracellularis. The microbe is not carried, as a rule, by dust, contrary to the view expressed by Westernhofer, for Jüger and Germanos have demonstrated that the Diplococcus is destroyed by drying. This would accord with clinical experience, as the disease is more prevalent in winter and early spring months. It is, also, well-known that unhygienic surroundings, and a debilitated system, favours its development. As showing the etiological relationship of the Diplococcus intracellularis (with this disease) of the twenty cases reported by Anderson, which were examined by lumbar puncture, "seventeen showed the presence of an intracellular Diplococcus decolorizing by Grams'; seventeen attempts were made to grow the organism; thirteen were successful; cultures of blood were made in five, in one of which the organism was recovered; this last point is of special interest, as there are very few instances in the literature reporting the recovery of the organism from the blood." The point of entry is usually the nose, and the infection gains admittance to the meninges by different channels. It is interesting to note the Diplococcus intracellularis can be found in the nares of healthy persons who have attended cases of cerebro-spinal meningitis, and that the infection can be carried to others by such individuals.

Of the five cases published by F. X. Wall and E. N. Eisendrath, in which autopsies were made, the absence of any focus of infection in any part of the body, other than the nose and its accessory cavities, precluded the possibility of a different origin. In F. R. England's case, complicating measles, although no autopsy was made, cultures from the nose, before death, revealed the presence of the meningococcus of Weichselbaum. Adami, in 1897, drew the attention of the profession in Montreal to the fact that he considered the nose a common source of infection in such cases.

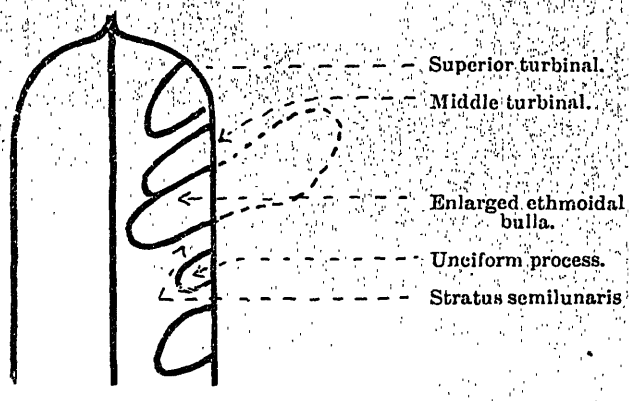
In Dreyfuss' tables, which show the relationship existing between empyema of the different cavities and inflammation of the meninges and brain substance, there are five cases of death caused by extension of the infection from the antrum of Highmore; eighteen cases of death

following empyema of the frontal cavities; ten cases following infection from the ethmoidal labyrinths, and eleven cases following empyema of the sphenoidal cavities. From a study of Dreyfuss' tables one would conclude that the most frequent intracranial lesion, following empyema of the antrum of Highmore and sphenoidal cavities, is thrombosis of the cavernous sinus, while that which follows empyema of the frontal cavity is intracerebral abscess, and the specific brain lesion, following empyema of the ethmoidal cells, is meningitis.

The following case reported by me in the New York Medical Journal came under my observation in December, 1899.

A girl, aged 9, had suffered from general malaise and headaches for a period of two weeks; at the expiration of that time the pain had become more marked in the outer half of the right frontal and parietal regions. It was aggravated by noise and photophobia was present. The patient complained of a feeling of nausea, but did not vomit. Temperature 102½° F., pulse, 130; family history good; lungs normal. There was a muco-purulent discharge from both nostrils, more copious from the right. The family physician suspected some meningeal involvement and requested me to make an examination of the nose and ears.

The ears were normal. Examination of the nose revealed a muco-purulent secretion in both nostrils, particularly in the right middle turbinated space. There was atrophy of both inferior turbinals. The anterior end of the right middle turbinal was enlarged; the ethmoidal bulla on this side was distended and pressed upon the inferior and inner surface of the middle turbinal as shown roughly in the accompanying diagram.



I advised both nostrils to be sprayed with a two per cent. solution of cocaine in listerine every hour, to be followed a few minutes later by

equal parts of glycothymoline and water, in order, if possible, to flush out the cavities and prevent any possibility of untoward affects from the cocaine. A large amount of pus came away in the return fluid. Twenty-four hours after this treatment was instituted the headache and other unfavourable symptoms had disappeared, and the temperature and pulse were almost normal. From the history and symptoms of this case I regard it as one of attenuated meningitis, caused by extension of infection from the right ethmoidal labyrinth.

Report of Huguenin's, Ogston's and Warner's cases of meningitis, following infection from one or more of the cavities, are instructive, and a synopsis of the case of the last named writer may prove interesting.

A man, aged thirty-two, a gardener by occupation, presented himself for treatment, complaining of intense pain in the frontal region, which, however, soon became general. The patient was unable to sleep, and vomited twice during the first twenty-four hours. On the second day coma and convulsions supervened, and death occurred the beginning of the third day. The post mortem revealed acute meningitis involving both halves of the basal meninges; the lateral ventricles were full of pus; the dura mater, at the base, presented a healthy appearance, with the exception of that portion which covers the lamina cribrosa, which was slightly thickened and easily separated from its attachment. The lamina cribrosa was covered with exudate. The frontal cavities were completely filled with pus, as well as the mucous membrane of the olfactory portion of the nose and that of the ethmoidal labyrinth. No bony caries was found.

It is well known to nasal surgeons that children suffering from nasal and naso-pharyngeal growths are unable to compete, either mentally or prysically, with children who enjoy good health. The same, also, applies to adults, and the following case, which was referred to me by Dr. W. H. Drummond, illustrates the effects of pressure of the nasal veins upon those of the meninges.

Case 1. A man, aged fifty-eight, a dye worker by occupation, complained of almost constant dizziness and inability to concentrate his mind upon his work. The organs, so far as could be ascertained, were normal. Examination of the nose revealed a slight deviation of the septum to the right, and marked hypertrophy of both middle turbinals; bands of tissue connected the left middle turbinal with the septum; both inferior turbinals were slightly hypertrophied, and there was a chronic nasopharyngitis.

After removal of the hypertrophies from the middle turbinal the patient experienced complete relief from the attacks of dizziness.

Case II. Referred to me by Dr. J. M. Elder. A man, aged fifty-six. Face presented a sallow, unhealthy appearance; complained of suffering from occasional headaches for the past ten years, and was subject to a cold in the head, particularly in the spring and autumn months. For the past year the headaches were becoming more frequent, and accompanied by attacks of dizziness.

On the morning of November 22nd, 1898, he had such a pronounced attack of dizziness while driving that "he almost fell out of the carriage." He states that he had had a discharge from the right nostril for the past ten years.

Examination of the viscera revealed no abnormalities.

Nasal examination showed deviation of the septum to the left, with a bony cartilaginous ridge extending from the anterior naris to the choana on the left side. There was marked hypertrophy of the right middle turbinal, and considerable pus in the right middle meatus.

Exploratory puncture of the right maxillary antrum revealed the presence of a large quantity of pus.

I drained the antrum through the alveolar process of the second bicuspid, and, as pus was still present in the nose after cleansing the antrum, I removed the anterior end of the middle turbinal and curetted the ethmoidal bulla and the anterior group of cells; pus flowed freely. There was considerable hæmorrhage following the removal and curettement, which I controlled with several large plugs of sterilized absorbent cotton, saturated in a glycerine alcoholic solution of suprarenal extract.

Since the operation, the patient presents a healthy, ruddy appearance. He has had no recurrence of the attacks of headache or dizziness, and states that he has not enjoyed such good health for the past ten years.

In many cases of nasal obstruction, involving the middle and superior half of the nose, I have found "dizziness" not an infrequent symptom, which disappears after the removal of growths and hypertrophies in this region.

In such cases the effects of pressure upon the nasal veins caused a damming back of the blood from the veins which communicate with those of the meninges, and the disturbance in the maintenance of the equilibrium of the basal meningeal veins, which secondarily affects the amount of cerebro-spinal fluid in the subdural space and other lympathic spaces of the cerebrum, thus manifest itself by attacks of dizziness.

This theory is purely mechanical, but appeals to me as rational.

Conclusions.

The advisibility of examining the nose and naso-pharynx in all cases where meningeal inflammation is suspected.

In all cases of headache, particularly where the cause is obscure.

In all cases of dizziness, whether or not associated with aural disease, examination of the nares should never be neglected.

The necessity of exact clinical and anatomo-pathological observations in order to demonstrate the relationship existing between diseases of the brain and its membranes, as secondary to inflammation of the nose, naso-pharynx and pharynx.

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The thirty-ninth annual meeting of the Canadian Medical Association will be held in Toronto, on the afternoon of the 20th of August and the forenoon of the 21st. The meetings which will be of an executive character will be held in the New Science Building on College street, at the head of McCaul street. The first session will convene at 2 o'clock p.m., in the north lecture room. The chief item of business will be the reception of the report of the Special Committee on Re-Organization and for this alone there should be a large and representative attendance.

At the annual meeting of the Ontario College of Physicians and Surgeons, Dr. W. H. Moorehouse, of London, was in the chair. There will in future be examinations at London, Ont., as well as Kingston and Toronto. The college property was lately sold for $100,000, and the finance committee reported a balance of $62,580 on deposit to the credit of the college.

THE

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THE LATE DR. CRAIK.

It is fitting that in these pages we should make reference to the loss sustained by the medical profession in the death of one who has so long been identified with the progress of medicine and medical education. It is not enough to say that his active life has been contemporaneous with the most progressive half century that this country has known, but it may well be said that no one has been more closely identified with the movement than was Dr. Craik. He has given at all times his time and his efforts not only to McGill University, of whose medical faculty he became Dean, but also to the needs of the Province; how much time and energy he bestowed upon the furthering of the interest of the profession at large and of the College no one but himself ever knew; all will acknowledge that his efforts were self-sacrificing and generous, and the results speak for themselves.

It is too much the custom of the world to withhold due praise while a man lives, and be content to lavish it upon ears that can no longer hear it;

we do not say it was so in Dr. Craik's case, because he lived to see much of his work bear fruit and to enjoy the reputation of his well-doing; but it is right that in the day of his death the physicians of this province and McGill University should formally acknowledge, and reiterate the acknowledgement of their debt to him. An extended account of Dr. Craik's life will be found elsewhere in these columns.

OF SPEAKING WITH AUTHORITY.

One is led often to wonder what it is necessary to possess in the way of reputation for knowledge or truthfulness, to be able to stand up boldly and declare some far-dragged theory or some monstrous untruth; the qualifications appear to be simple, namely that one's name can be spelt in English letters, and that one live at considerable distance from the field wherein the doctrine is to be promulgated.

It is a long-known experience among medical men, that the pronouncement gains or loses value from the character of the writer: the statistics of some men are to be depended upon, and those of some other men are just statistics; and the theories of one man are thoughtful and those of another man mere vapor. Professor Y. of San Francisco is reported as having made an authoritative statement: if Dr. Z. of Montreal made the same statement, he would be laughed at: we would say "we know Dr. Z., and he is not a man who has a right to be quoted on the subject. But, knowing nothing of Professor Y., we copy his statement, and lend him an air of authority he is probably quite unfitted to possess.

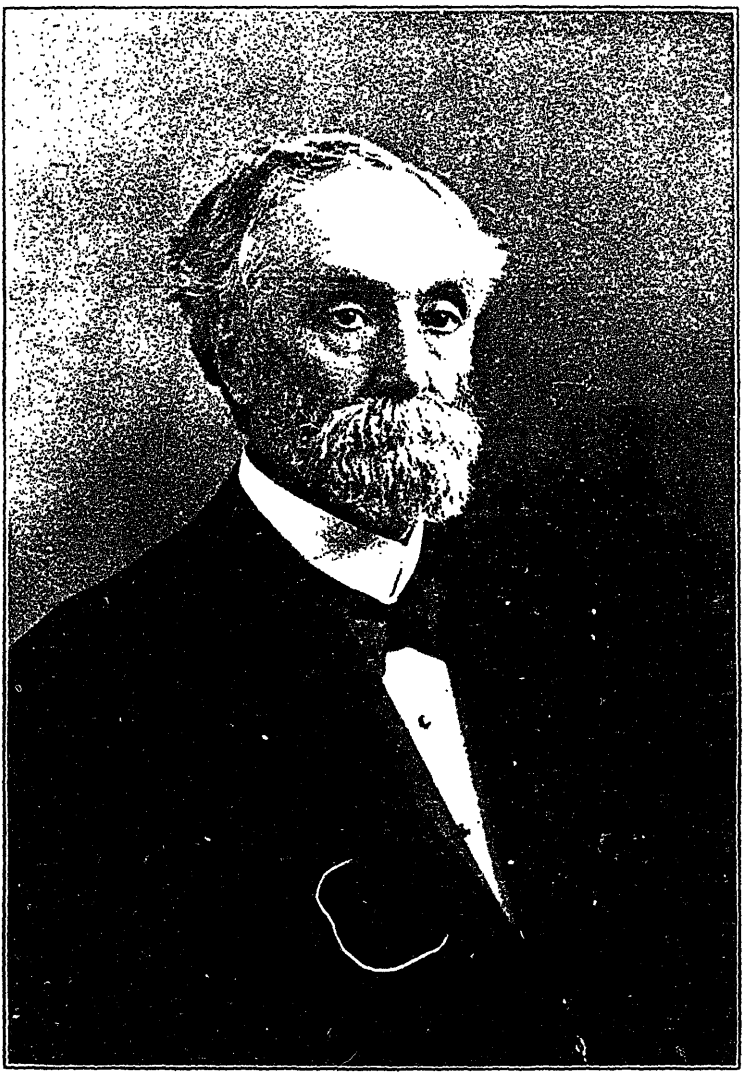
While the papers had lately announced with a good deal of unction that Prof. Dieulafoy had pointed out that operations for appendicitis were at times performed unnecessarily, they chose the fact of his so saying as a peg on which to hang a wonderful announcement from one Dr. Blanchard. It is the latter that forms the text of these remarks and not Prof. Dieulafoy, who merely played a variation upon the old theme that it is human to make mistakes; his paper had nothing in it, as far as we have seen, to which any one could take exception. But Dr. Blanchard's remarks are of quite another tenor. We are unable to say exactly who Dr. Blanchard is: there is a Professor Blanchard, a parasitologist, of the faculty of Paris, whose knowledge of parasites is great; if it be not he, we humbly ask his pardon. The Dr. Blanchard who speaks, states that his view is endorsed by Professor Metchnikoff. If Professor Metchnikoff does endorse these views, we will go further and say that not the authority of a thousand Metchnikoffs could render them anything but ludicrous. There is great likelihood that the eminent scientist's name has been dragged in without due warrant, for a paragraph that has eight misspelled words in less than forty lines may have other

inaccuracies. But we come to the new etiology of appendicitis, which is soberly considered worth the ink with which it is printed.

"Appendicitis is caused by three kinds of worms, of which the dreaded trygocephal is the most dangerous." What, then, is the trygocephal? Has one of our old well-known friends assumed this terrible mask, and is one of the sheep decked out terribly in the wolf's garb? It must be so. 'The dreaded trygocephal'!! What a name to conjure with! we hope the 'Sketch,' in its series of illustrations "The gentle art of catching things," will be good to us and give us a picture of this beast, from the gifted pencil of its contributor. "It is this creature that causes the severe pain accompanying appendicitis." Naughty trygocephal! We are the last to declare that our knowledge in medicine is in the least finite, but there are some facts in physiology and in kindred sciences. and the man who make the last quoted statement is misled. "The microscope has shown its presence in every case observed." Has the intestinal content had to bide its time till Blanchard examined it, that we should know that there are protozoans therein? Since trichocephalus is in the intestinal contents, are Koch's postulates so soon to be thrown overboard? "They attribute its presence to the use of vegetables grown in ground fertilized by deodorized and chemically treated products of sewers...." tinal contents, are Koch's postulates so soon to be thrown overboard? not necessary that these great thoughts should be allowed to diffuse too widely. It has generally been considered good housewifery to wash vegetables; or can it be that the eggs get into the very cells of the vegetables? Such a theory would be in keeping with the rest of their notions. Dr. Blanchard declares that "the use of sewage however skilfully treated, ought to be made illegal." Perhaps Dr. Blanchard considers sewage a luxury, and would go on to say that sewage ought to be banished from the earth, along with crime, sin, disease, and pain, extremes of temperature, and a dozen other things that we think annoying.

He goes on to say that "appendicitis.... caused by foreign body... is the only form in which an operation is necessary." Unless one is especially gifted or temporarily inspired, one really cannot do justice to a statement like that. Its calm assertiveness is irritating. Perhaps it will be the professor's lot to be stricken by appendicitis, caused by something else than foreign body, and to be treated on the basis of his own beliefs. We wish him no worse fate.

We extend our congratulations to Mr. J. R. Roebuck, lecturer in chemistry in the Faculty of Medicine, McGill University, upon his obtaining the degree of Doctor of Philosophy from the University of Toronto.



THE LATE DR. CRAIK.

Obituary.

DR. CRAIK.

The grave has just closed over the remains of a man of no ordinary worth — one whose career was marked by much that was noteworthy. To analyze such a life is not an easy task for the writer, whose chief, whose only qualification, perhaps, is that he is one of the earliest surviving friends of him whose loss we all regret.

Robert Craik was known to me from the first year of his medical studies. In the session of 1850-51, when the late Dr. Bruneau—Professor of Anatomy at that period—was examining his class, my attention was drawn to one of the students then being examined. Question after question was put, and answer after answer came in a clear voice, and in an unhesitating manner. Dr. Bruneau, who loved to find among the students one more competent than another, continued his questions, going into more minute details, but the student was apparently quite at ease, and answered faultlessly. We had an opportunity of scanning his strong intellectual features. He seemed somewhat older than first year students usually are. He had a pale, a very pale face, an expansive brow over which jet black hair fell in wave-like profusion, a massive head, features cleanly cut, and a chin remarkable for its prominence. From a fellow student near me I learned the name of the pale-faced youth: it was that of the subject of these reminiscences.

Inexperienced youth is prone, at times, to cast the horoscope, and I, without the aid of the astrologer's art, had no hesitation in predicting that the career just being entered upon by the, till then, unknown student would be more than ordinarily eventful. Young Craik's subsequent student life was equally brilliant, and at the end of four years was signalized by his being awarded the prize for his final examination. He graduated with honours in 1854 and at once became House Surgeon to the Montreal General Hospital. He was already somewhat familiar with the work having, during the last years of his pupilage, been dresser to several, in turn, of the attending staff. As house surgeon he was markedly successful. In addition to his thorough efficiency, his shrewd common sense, his

genial manners, his mildness in ordering, his firmness in requiring the strictest obedience to his well thought out orders were important qualities.

In the meantime McGill University opened to him her portals by naming him Demonstrator of Anatomy. During his demonstratorship he supplemented his modest income somewhat, and added to his own stock of knowledge, by preparing medical students for their examinations.

In 1859, while still House Surgeon, he was named by his Alma Mater Curator of the Museum. In 1860—after six years service as house surgeon, he was promoted to the much coveted position on the staff of attending physicians. At about the same time he was elected Professor of Clinical Surgery, and retained it until 1867. During that time he also taught medical jurisprudence for a short period.

Ultimately, on the death of Dr. Sutherland, he became Professor of Chemistry. Dr. Sutherland was, perhaps, one of the most brilliant lecturers that ever graced a professorial chair, and his death was deemed, at the time, an irreparable loss. But comparisons were not often made between th new teacher and his gifted predecessor and master. Both were deemed to have reached, each in his own way, a high degree of excellence and an eminence and a merit quite his own. The same facility of expression, and the same excellnce of language distinguished both. Perhaps the elder had been somewhat less terse and concise, the younger less ornate, but both were equally lucid.

The science of chemistry affords unlimited scope for analysis and investigation. It occupies itself with material things; with the changes which matter undergoes in passing from form to form, and with the laws which govern and control those changes. Into this fascinating branch of science Dr. Craik entered, with all the energy of an energetic nature.

It has sometimes happened, especially in recent times, that a teacher of science, and especially of chemical science, deeming himself qualified thereto, has attempted to unravel the hidden relations which exist between the Maker and the made—the Creator and the created, and to measure out, limit, and define when and how far, the created—the made is self-existent and independent of all control from without itself. To such a height

of presumption the wise Craik never soared, and never attempted to soar. To his chemical class he ever taught that matter, so far as all human agency is concerned, is indestructible—that with all his ingenuity, and with all chemical agents at his command, the chemist is powerless to destroy the most infinitesimal portion of matter—small though it be as the mote which floats in the sunbeam—and is equally powerless to create. He taught that true science is immutable, resting on laws an Omnipotent has framed, but that our interpretation of it, being deduced from knowledge more or less imperfectly arranged, is constantly undergoing change.

And thus it happened that the atomic theory of John Dalton which, for three-quarters of a century had held undisputed sway, was claimed to be insufficient to account for many of the phenomena in nature, and must give place to the newer one of Hoffmann. The relative number of atoms entering into a given compound was altered; chemical equivalents and combining volumes were changed; and, as a result, the terminology with which we were familiar in my student days was altered, and a new nomenclature was demanded in its place.

To unlearn and to forget what had been taught for three-quarters of a century in all our medical schools (and what Craik had himself taught during the whole period of his professorship), and to adopt new combining volumes, and therewith a new nomenclature, was a colossal work which Craik, now engaged in a large and lucrative practice, was not disposed to undertake. He therefore resigned the chair of chemistry, and took that of Hygiene and Demography.

Hygiene, 'tis true, is not a distinct science as is anatomy or chemistry or physics. It is a compound science, but, for its full comprehension, and for its being properly taught, a knowledge of anatomy, of chemistry, of physics, and of other allied sciences is essential. Dr. Craik's six years labour in his anatomy class, and his many years in the chair of chemistry, fitted him in an especial manner for his new work, while his experience in the practice of medicine made the extension of his investigations from the individual to the general public both easy and natural. His course of hygiene and demography, while

drawing less largely on his time and energies, was an eminently successful one.

Subsequently (1889), on the death of Dr. R. P. Howard, he was chosen, unanimously it was said at the time, Dean of the Medical Faculty of his Alma Mater. It required qualities of no ordinary character to enable one to fill, acceptably, a place once occupied by the painstaking, diligent, conscientious Holmes; by that robust intellect and commanding personality, G. W. Campbell; or by that hard-working Howard, of courteous bearing and of gentlest memory—but Dr. Craik seemed to fill, at once, all requirements. While Dean of the Medical Faculty he guided it, we are assured, with tact and judgment, and more by the clearness and wisdom of his mental survey, than by the authority of his position.

One day it was announced that Dr. Craik had resigned the deanship! No one could conjecture why, and the public was not taken into his confidence. From that time forward, notwithstanding frequent interruptions by sickness, Dr. Craik continued steadily the practice of his profession. At length the last illness came — a long one, endured with great patience. In November last a cough began to trouble him. His physician — one of his former pupils in whom he had unbounded confidence — early informed his patient of the existence of pulmonary tubercle. Craik did not question the correctness of that opinion — but he found it difficult to understand how, when, and where, at his time of life, the unwelcome bacillus should have found entrance into his system.

Omnes morimur, says the teacher, *et aquæ quasi dilabimur in terram quæ non revertuntur.*

It is said that, with most men, changes are effected little by little, and death gradually prepares them for the final stroke. This is not, methinks, a truth of universal application. Be that as it may, it was a great satisfaction to his friends to observe an entire absence alike of that ostentation which is so apt to deceive others; and of those almost nervous, hysterical emotions by which patients are so apt to be themselves deceived. Far otherwise was it with Craik. He spoke of the great change impending with a calmness which was truly edifying. There was no repining — no expressed desire to live — nor yet to

die — but a cheerful readiness to go whenever his Maker should choose to summon him.

Ere he slips from memory, as the water which passes to the ocean and will never return, I would hastily summarize thus: Dr. Craik's *intellectual* qualities were of a very high order; his insight was unerring — his view of most questions deep and penetrating—and his discernment clear and unclouded

His memory was most retentive — and nothing was stored therein in confusion. There was method in all his acts, and even in his fancies, and every thing with him was arranged with a view, seemingly, to some desirable end, proximate or remote. He was emphatically a worker. He loved work for its own sake; and he loved it for the return it brought in contentment, and in the consciousness of being the better qualified for a higher degree of usefulness. In his work he was most methodical. He traversed no needless course — but with an object clearly in view he examined thoroughly, and recorded truthfully.

But more important still, his *moral* qualities were of a high order. There was in Dr. Craik a singleness of purpose which I have rarely seen equalled. He was scrupulously honest — honest in thought, honest in deed, honest in word. With him honesty was not a matter of policy, for he who acts on that principle is, as Whately says, not an honest man. Craik's honesty was the legitimate offspring of his truthfulness of character, and of a strict conformity to fact.

As a result: his position in the profession and in society was exceptionally influential, while to the younger generation he was a safe beacon for their guidance.

And what was the influence upon himself? In a word: His actions being guided seemingly by the highest, the most rigid principles of truth and justice, neither the affection of his students; nor the regard or liking of his patients; nor the esteem of his colleagues made inroad upon his modesty, and while he kept himself aloof from presumption and self-conceit, he gave evidence of neither weakness nor inconstancy.

W. H. H.

THE AMERICAN TUBERCULOSIS EXHIBITION.

Under the auspices of the National Association for the Study and Prevention of Tuberculosis, and of the Committee on the Prevention of Tuberculosis of the Charity Organization of New York, the American Tuberculosis Exhibition was organized and the first exhibit was held in the Museum of Natural History in November, 1905.

The object of the Exhibition was to show the methods that are being adopted throughout America and Europe to prevent and cure consumption, and by a practical object lesson to arouse and interest the public and medical profession to concerted effort in preventing this white plague, and to awaken the conscience of the public to recognize the individual's responsibility.

The exhibition was extremely varied and instructive to the laity, sociologists and the medical profession. There were in all upwards of ninety exhibits by different Boards of Health, Sanatoria, Hospitals, dispensaries and educational associations, averaging more than 5000 square feet of wall space. Besides charts and photographs there were many models of appliances and buildings illustrating easy and cheap methods of treating tuberculosis patients in their homes. Moreover a series of lectures were given while the Exhibition was open by various prominent sociologists, labor organizations and physicians, which were attended by appreciative and varied audiences.

The remarkable success of the exhibition was proved by the immediate and urgent request to have the exhibition repeated in various cities throughout the United States. During the past seven months seven cities have been visited with an attendance of upwards of 200,000 persons. That interest has grown in this instructive exhibition is shown by the fact that while in New York only 17,000 persons visited it during the fortnight, in Milwaukee, where it has recently been, 54,000 people visited it during a like period. Reports show that wherever the exhibition has been an enthusiastic interest was aroused and practical results in the campaign against tuberculosis have followed.

The National Sanitarium Association of Canada have arranged to bring the exhibit to Toronto in August for a fortnight beginning with the opening of the meeting of the British Medical Association. It is hoped thus that more than a local interest will be elicited and that professional men through the Dominion and laymen through the province will take the opportunity of visiting this great object lesson on what is at present being done to prevent and cure tuberculosis.

The following were a few of the striking features shown at the New York exhibition, the greater number of which will be exhibited in Toronto.

In the exhibit of the New York City Department of Health were included photographs and charts illustrating in detail methods on reporting, recording, following up and treating tuberculosis cases; maps of wards in New York City showing grouping of houses in which cases of tuberculosis have been reported; illustrations and explanations of methods employed at the out-patient clinic of the Department.

The New York Tenement House Commission presented illustrations of the appalling conditions under which the New York poor live, making plain the hopelessness of the tuberculosis problem until the public conscience has awakened and insisted that such things shall not be. They showed a model of a typical dark room in a tenement house, one of 360,000 of its kind in New York City. The only source of light and ventilation is a window in a court which is dreadful in squalor and filth. The onlooker is only partly reassured by the statement that the articles he sees before him have been sterilized. In pleasing contrast is a model of the same room after the visiting nurse has taken charge. Light has been admitted by cutting a window, and cleanliness, neatness and comfort have replaced the conditions of misery. The commission showed also various models in plaster and papiermache of tenement houses both typical and ideal. One model of a block illustrates a type of building in which 4000 persons have lived at one time.

The Committee on the Prevention of Tuberculosis (New York City) sent interesting charts illustrating the incidence of tuberculosis and resulting mortality in different races and nationalities under various social conditions and at different periods of life.

The Maryland State Board of Health and the Tuberculosis Commission of Maryland showed a most instructive group of graphic illustrations of various sociological statistics both general and local.

The Chicago Department of Health exhibited large charts of wards with reported cases of tuberculosis plotted thereon by different coloured pin heads—the different colours representing different years.

Various associations in cities and larger towns formed to be both educational and practically helpful, exemplified their methods of organization and the work that had been accomplished. As examples may be mentioned the Maryland Association for the prevention and Relief of Tuberculosis, the Cambridge Anti-tuberculosis Association, and the Boston Association for Relief and Control of Tuberculosis.

The practical methods of the visiting Nurses Association of Cleveland, Boston, Baltimore and Chicago were suggestive of how much might be done in every town that has the least interest in attempting to fight consumption.

The exhibits of the special dispensaries for tuberculous out-patients of the New York Department of Health, the Vanderbilt clinic, the Presbyterian, the Gouverneur and New York Post Graduate Hospitals, and of the Henry Phipps Institute in both Philadelphia and Baltimore were very helpful to those interested in the detail of tuberculosis clinics.

Some twenty-four sanatoria and hospitals were represented by photographs, charts graphically illustrating results, charts showing climatic conditions of various localities, also tables with details of cost, maintenance, various illustrations of clinical forms in use, and other matters of interest. In most cases there were models illustrating simple and effective housing of patients living the out-of-door life. All the well-known institutions from the Atlantic to the Pacific were represented.

Of particular interest was the exhibit of Clinton Prison, at Dannemora, New York, showing what can be done in a large institution to control tuberculosis.

The Sea Breeze Hospital for Children attracted much attention. It is the only institution of the kind in America.

The French and German exhibits were late in arriving and only a few were in position when the exhibit closed. Maps of both countries showed the geographical position of the various sanatoria. Illustrative charts of the objects of and work done at several French anti-tuberculosis dispensaries were shown and here were some particularly interesting tables of the diets of various classes of working men, the actual being compared with the ideal relative expenses also compared. Tables also illustrated the relative value of different articles of food.

Of especial popular interest were the laboratory exhibits. The Henry Phipps Institute showed admirable gross specimens, prepared by the Kaiserling method, illustrating tuberculosis in various organs at different stages. The New York College of Physicians and Surgeons exhibited along similar lines. The Saranac Laboratory exhibit of tubercle bacilli from Koch's first culture and also of human, bovine, avian and piscian forms and the various products obtained from the tubercle bacillus was always interesting. A collection of various acid-fast bacilli, showing the resemblance of the various relations of the tubercle bacillus, was by the National History Museum.

Practical object lessons illustrating the dissemination of disease were not wanting; culture plates illustrating dissemination of micro-organisms from sputum, by coughing, by sneezing, and by the agency of flies; a cotton filter which had been placed in the air shaft of an apartment house; and a collection of filthy pencils and chewing gum used by school children.

Enough has probably been said to illustrate the broad character of the exhibition. The various exhibits were placed under the headings of their respective states and any particular point of interest could readily be found. Throughout the day and evening explanatory tours were conducted by various interested persons both lay and professional. Visitors were from all classes of the community and the exhibit was not least appreciated by those who had personal experience of dreadful local conditions.

Canada was represented only by the National Sanitarium Association and the Toronto Free Hospital for Consumptives. In the Toronto Exhibition it would be desirable to have some illustrations of the work done elsewhere in Canada up to the present time. There are various institutions and organizations which might well be represented.

The Toronto exhibition will be held in some building centrally situated but not yet determined upon. A programme of addresses which should prove instructive and interesting is being arranged for every second evening of the fortnight. Stereoptican views will be given every evening and there will be specially conducted tours for the purpose of explaining various features of the exhibit. Physicians are urged to attend and to draw the attention of the public to the exhibition.

Individuals or associations who would in any way care to assist will have their inquiries promptly answered and all information furnished by addressing J. S. Robertson, Secretary National Sanitarium Association, 28 Adelaide St., West, Toronto, Can.

Already such inquiries are commencing to reach the secretary, one to-day being from an official of the Women's Institute, members of which desire to attend some of the meetings.

(Communicated by Charles D. Parfitt, M.D., M.R.C.S., Eng.)

TRAVELLING ARRANGEMENTS—BRITISH MEDICAL ASSOCIATION.

On the occasion of the visit of the British Medical Association to Toronto, Ont., August 21-25, 1906, the Eastern Canadian Passenger Association has authorized the following fares and conditions:

1. *Delegates from Canada, United States and Mexico.*—Lowest one-way first-class fare for the round trip on certificate plan from all points in Eastern Canadian Passenger Association territory. Passengers going rail, returning Richelieu and Ontario Navigation Co., or vice versa, rate to be one and one-half rail fare. Certificates to be visèd and fee of 25 cents charged (tendered connecting lines and associations.)

2. *Extension of Time Limit.*—On deposit with Joint Agent of properly validated standard convention certificates or return portions of round trip tickets on or before August 28th, 1906, and on payment of $1.00 at time of deposit, an extension of time until September 30th, 1906, will be granted.

3. *Delegates from Outside of Canada, United States and Mexico.*—(a.) On presentation of certificate signed by G. H. Webster, Secretary E. C. P. Association, and countersigned by F. N. G. Starr, Secretary of the Canadian Committee, or Guy Elliston, Secretary of the British Medical Association, one-way tickets to be sold between all points in Canada, at one-half lowest one-way first-class fare, round trip tickets at lowest one-way first-class fare, except as per Clause b.

(b.) To North Pacific Coast Points and Return.—Agents at Montreal and Toronto only, to sell round trip tickets to North Pacific Coast points, viz.: Vancouver, Victoria and Westminister, B.C.; Bellingham, Everett, Seattle and Tacoma, Wash., and Portland, Ore., as follows: Going and returning via direct routes, usual diverse routes to apply, at through round trip rate made by adding lowest one-way first-class fare to Chicago to $62.50 tendered therefrom.

(c.) To Los Angeles and San Francisco and Return.—Agents at Montreal and Toronto only, to sell round trip tickets to Los Angeles and San Francisco, Cal., and return as follows: Going and returning via direct routes through Chicago, usual diverse routes to apply, at through cago to $62.50 tendered therefrom. Going via direct routes, returning round trip rate made by adding lowest one-way first-class fare to Chicago to $62.50 tendered therefrom. Going via direct routes, returning through North Pacific Coast points, viz.: Vancouver, Victoria or Westminster, B.C.; Bellingham, Everett, Seattle or Tacoma, Wash., or Portland, Ore., or vice versa at through round trip rate made by adding lowest one-way first-class fare to Chicago to $75.00 tendered therefrom.

4. *Dates of Sale for Side Trip Tickets for Delegates from Points Outside Canada, United States and Mexico.*—July 1st to September 30th, 1906, inclusive, except that dates of sale to North Pacific Coast and California points will be July 1st to September 7th, 1906, inclusive, with going transit limit of September 20th, 1906.

5. *Return Limit for Side Trip Tickets for Delegates from Points Outside Canada, United States and Mexico.*—September 30th, 1906.

6. *Side Trips from Toronto.*—Side trip tickets will be sold from Toronto only, to Delegates from the Maritime Provinces, from points west of Port Arthur and from the United States and Mexico, on presen-

lation of properly validated convention certificates, return portions of round trip tickets, or deposit receipt if extension of time is availed of as per paragraph 2), at lowest one-way first-class fare for the round trip to all points in Canada, except that fares to North Pacific Coast points are to be made by adding lowest one-way first-class fare to Chicago to $62.50 tendered therefrom. Tickets may also be sold to North Pacific Coast points in the United States and to Los Angeles and San Francisco, Cal., and return, on basis of fares shown in paragraph 3, clauses b and c.

Side Trips for Ontario and Quebec Delegates.—Side trip tickets will be sold from Toronto only, to Delegates from Ontario and Quebec to all points in Canada west of and including Sudbury and east of and including Montreal, Que., at lowest one-way first-class fare for the round trip, except that in ticketing to North Pacific Coast points in Canada, fares and routes as shown in pargraph 3, clauses b and c, will apply. Tickets may also be sold to Ontario and Quebec Delegates to North Pacific Coast points in the United States and to Los Angeles and San Francisco, Cal., and return at fares and routes as shown in paragraph 3, clauses b and c. Tickets as per this clause will be sold only on presentation of properly validated convention certificate, or deposit receipt (if extension of time is availed of as per paragraph 2), or, in the case of Toronto local physicians, on presentation of certificate of form designated on page 2, signed by G. H. Webster, Secretary, B.C.P. Assn., and F. N. G. Starr, Secretary of the Canadian Committee, British Medical Assn.

7. *Dates of Sale and Limits for Side Trips from Toronto for Delegates from Canada, the United States and Mexico.*—Thursday, August 23rd, to Saturday, September 1st, 1906, inclusive. Tickets to North Pacific Coast and California points to bear going transit limit of September 20th, 1906. Final return limit September 30th, 1906.

8. *Validation of Return Portions of Tickets to North Pacific Coast and California.*—Return portions of tickets to North Pacific Coast and California points must be validated by Joint Agent at destination, for which a validation fee of fifty cents will be charged.

9. *Stop-overs on Side Trip Tickets.*—Side trip tickets to all points in Canada will permit stop-overs at any intermediate point going and returning within final limit, except that on side trip tickets to North Pacific Coast and California points stop-overs will be allowed on going trip from North Pacific and California points, stop-overs will be allowed within final limit on deposit of ticket with Agent at stop-over point immediately upon arrival, except that tickets reading for return via Canadian Pacific, Great Northern Pacific will not require to be deposited.

10. *Additional Amounts Required via Steamer Lines.*—On several steamer lines extra charge will be made for meals, berths, etc. The following arbitraries have been advised:

Canadian Pacific Railway Upper Lake Steamships.—Going lake, returning same, $8.50 additional to be collected. Going lake, returning rail, or going rail, returning lake, $4.25 additional to be collected.

Richelieu & Ontario Navigation Co., St. Lawrence Route.—Delegates holding return portions of round trip tickets reading all rail to Toronto may return via steamer on presentation of ticket to purser and payment of following amounts, viz.: $6.50, Toronto to Montreal; $3.50, Kingston to Montreal.

Northern Navigation Co.—One-way meal and berth arbitraries. From Collingwood to Owen Sound: to Sault Ste. Marie, $5.00, Mackinac, $7.00, Petoskey, $8.50, Killarney, $2.00, Parry Sound, 75c. From Sarnia: to Sault Ste. Marie, $3.50, Port Arthur and Fort William, $8.50, Duluth, $11.00.

Algoma Central and Hudson Bay S.S. Line.—Meals and berth arbitraries. From Southampton, Kincardine, Goderich and Sarnia to Sault Ste. Marie and Manitoulin points, one way, $4.00; round trip, $8.00.

11. Joint Agency at Toronto.—Joint agency at Toronto will be located at Room 101, Union Station, and will be conducted in the name of G. H. Webster, from August 21st to September 24th, 1906. Office hours, 9.00 a.m. to 6.00 p.m.

Addendum to Drs. Molson and Gordon's Case Report, page 504.

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Reviews and Notices of Books.

GASTRIC SURGERY. By HERBERT J. PATERSON, M.A., M.B., B.C., (Cantab) F.R.C.S., England. Hunterian Professor of Surgery & Pathology at the Royal College of Surgery. Assistant Surgeon to the London Temperance Hospital. London: Ballière, Tindall & Cox, 1906. Canadian Agents, J. A. Carveth & Co., Toronto, Ont. $2.00.

The book is based upon a portion of Mr. Paterson's Jacksonian prize essay, and opens with a very interesting chapter on the history and operation of gastro-jejunostomy. Many have contributed to the perfection of gastric surgery, as it exists to-day. The stomach was a forbidden field in the days of Hippocrates. Larry, surgeon to Napoleon, observed "Les plaies de l'estomac ne sont pas mortelles dans tous les cas."

The present state of gastric surgery is one of which the profession has some reason to be proud. A mortality of a few years ago of 30 per cent. in 2,548 cases of gastro-jejunosotomy, is now reduced by Mr. Mayo Robson, to a mortality of 3.7 per cent. in a series of posterior jejunostomies, including simple and malignant cases; and Mr. Moynihan has recently recorded a series of gastro-jejunostomies for chronic gastric ulcer, uncomplicated either by an acute perforative or severe hæmorrhage, with a mortality of little over 1 per cent. The Mayos have reported 307 gastro-jejunostomies for non-malignant disease with a mortality of 6 per cent., while in the last 81 operations, there has been only one death.

Mr Paterson then takes up some of the more interesting questions connected with gastro-jejunostomies, and one of these certainly is "regurgitant vomiting," a condition known as "circulus vitiosus." Here, he is in accord wth a very generally accepted opinion among modern operators: that the condition is really one of obstruction, and Mr Pater-

son would place the obstruction at the efferent opening of the stomach. The idea that the presence of bile or pancreatic secretion in the stomach was the cause of regurgitant vomiting, is pretty well abandoned, and Mr. Paterson quotes a case of Mr. Moynihan's, which in a way, amounts to an experiment in man which confirms the findings in animals. In a case of complete traumatic rupture of the intestine at the duodeno-jejunal junction, the torn ends of the duodenum and jejunum were closed by suture, so that all the bile passed into the stomach through the pyloric orifice, and gastro-jejunostomy performed. The patient never suffered from vomiting, remaining in perfect health until his death, 14 weeks after the accident.

Mr. Paterson still leaves a loop 8 to 12 inches in length, while Mr. Moynihan and the Mayos', whose success in this work is phenomenal, have some time since given up the loop altogether. Mr. Paterson then goes into the after history of patients, upon whom gastro-jejunostomy has been performed; and without going into detail, it may be said, that he finds, speaking of non-malignant cases, that in only eight or in less than 7 per cent. of 116 cases which he has been able to trace, has the result of gastro-jejunostomy proved unsatisfactory. Sufficient space is given to the discussion of other operation details, including Mayo Robson's bone bobbin, Murphy's button, the Laplace forceps and the various sutures and suture materials. He finds that on the whole, mechanical appliances, are attended with uncertain results and that a small opening is apt to prove unsatisfactory. He estimates the risk of a subsequent perforation of a peptic jejunal ulcer as under 2 per cent.

In studying the end results of operated cases, he is able to show that patients may regain and maintain their normal weight, and live for nearly 20 years in perfect health. There can be no reason to suppose that the operation of gastro-jejunostomy tends to shorten life.

Mr. Paterson, in general, agrees with Munro, of Boston, and Mayo, that Finney's operation gives after results, hardly so satisfactory as those following gastro-jejunostomy. Mr. Paterson discusses the late results of gastric ulcer, including perforation, the hour glass stomach, and other contractions and adhesions, pointing out the cases in which surgical methods should be adopted in their treatment and the satisfactory results that can thus be obtained.

Very interesting indeed, is the chapter on "Cancer of the Stomach," in which the various procedures are described, and the satisfactory results that may be obtained on patients operated on fairly early, and according to modern ideas. He estimated that 10 per cent. of these patients submitting to operations are probably cured. These figures, al-

though encouraging, should act as a stimulus to the seeking after better results. An earlier diagnosis should enable us to achieve results in cancer of the stomach, quite equal to those obtained in malignant disease of other organs. The publisher's work is well done, and the book is to be commended.

TEXT-BOOK OF MATERIA MEDICA THERAPEUTICS AND PHARMACOLOGY. By GEO. F. BUTLER, Ph. G., M.D., fifth edition revised by Smith Ely Jelliffe, M. D., Ph.D. J. A. Carveth & Co., Canadian Agents.

MATERIA MEDICA AND THERAPEUTICS. By A. A. STEVENS, A.M., M.D. Fourth Edition. J. A. Carveth & Co., Canadian Agents.

A MANUAL OF MATERIA MEDICA AND PHARMACOLOGY. By DAVID M. R. CULLRETH, Ph.G., M.D. Fourth Edition. Lea Brothers & Co., Philadelphia.

These three text-books have recently been revised and adopted to the eighth revision of the U. S. P. The vexed question of classification is still unsettled and from the nature of the problem is liable to remain so until the subdivisions of this extensive subject become more definitely established. Prof. Cullreth whose work is more a treatise on materia medica than on therapeutics has adopted a grouping founded upon the origin of the drug, whether animal, vegetable, or mineral, which will prove of great assistance to the pharmacist; the relationship of crude drugs with their derivatives being maintained. The other authors follow the therapeutic classification which will probably be of greater use to the medical student.

In the first of these works pharmacy is quite extensively treated. The introductory chapters afford a comprehensive view of the subject and its relation with science in general. The historical notes are very interesting and provide a broad foundation for the study of therapy.

The second work contains a useful resumé of the changes in the last edition of the U. S. P. The chapters on "Remedial measures other than drugs" are well up to date, dealing with electricity, movement treatment for locomotor ataxia, the Schott or Nauheim treatment, etc. A considerable portion of the book is devoted to "Applied Theraptuics." This is clearly written and to the point.

In Prof. Cullreth's book the preliminaries treating of modes of employing remedial agents and drugs acting on the various systems, regarded from a general point of view, are full. The illustrations while not artistic, have been carefully drawn and portray the details of structure clearly. The chapter on the "Microscope and its use in Materia

Medica," will be of great use to the scientific student as the matter contained in it is not usually taught in the colleges.

Taken together these three books maintain the high standard already set and are well abreast of the recent advances in Materia Medica and Therapeutics. The paragraphs on the individual drugs, etc., are of necessity condensed, thus bringing the important points prominently before the reader.

NASAL SINUS SURGERY, with Operations on Nose and Throat. By BEAMAN DOUGLASS, M.D. Professor of Diseases of the Nose and Throat in the New York Post-Graduate School and Hospital. Illustrated with 67 full page half-tone and coloured plates, including nearly 100 figures. F. A. Davis Company, publishers, Philadelphia.

This book, we are told in the preface, has been written because of demands made for such a work by physicians who have worked under the author's direction. It should certainly fulfil the requirements, and will, we are sure, be a valuable aid, especially to those making a special study of the nose and throat.

Although not a large volume (being of 264 pages), Dr. Douglass has gone into the subject thoroughly, and, while the methods of others are also described there is abundance of evidence of original work.

The illustrations for the most part from photographs of preparations are excellent, and aid greatly in giving one a clear understanding of the subject discussed.

The first chapter is devoted to an anatomical review of the nose.

The frontal, ethmoidal, maxillary and sphenoidal sinuses are the subject matter of the next four chapters, a chapter being allotted to each. These sinuses are most interestingly and completely discussed from an historical, anatomical, therapeutic, and operative standpoint.

The sixth chapter deals with deflections of the nasal septum, operations for nasal deformities and paraffin injections.

After considering the anatomy of the nasal septum, the various forms of deflection are described with the methods of operations for their correction, among which are the Asch, Gleason and submucous resection.

This last, viz., the submucous resection, which has become so popular of late and has, in the hands of so many operators, given such satisfaction, is, perhaps, not treated as fully by the author as its merit entitles it to.

He mentions as objections to this operation, the length of time required to accomplish it, and the fact that perforations often result

from sloughing or from instrumentation. As to the first we are inclined to agree, but this is not a serious objection, the benefit derived subsequently fully compensating for the time consumed; besides, the after treatment is so simple that there is an actual saving of time eventually.

As to the second objection, one's experience would show a very small proportion of perforations and these are almost entirely confined to the earlier cases of the series.

External nasal operations for the relief of deformity are next dealt with in a sound and practical maner.

In Chapter VII. turbinectomy is fully discussed, while the tonsils, adenoids and uvula are the subject matter of chapter VIII. Chapter IX. is reserved for Exostoses and Synechiæ, the book being concluded by a chapter on Laryngotomy and Tracheotomy, including Bronchoscopy. The space at our disposal necessarily renders but a brief description of this excellent work possible, but we would strongly advise its careful perusal by those interested in the study of rhinology and laryngology and others who wish to add to their store of knowledge of the nasal sinuses, and nose and throat surgery.

W. H. J.

HEART DISEASE AND ANEURYSM OF THE AORTA. By SIR WILLIAM H. BROADBENT, Bart., K.C.V.O., and JOHN F. H. BROADBENT, M.D., F.R.C.P. Fourth edition. London: Baillière, Tindall & Cox, 1906.

In nine years, since the first edition of this work appeared, it has advanced to a fourth edition, which appears with additions and emendations, mostly from the hand of Dr. John F. H. Broadbent. The book is too well known to require any commendation in this column; it suffices to say that the additions are in keeping with the general style of the previous additions. Broadbent's "Heart Disease" is essentially the product of the physician, who has observed long and keenly; those who know the author know well his thorough, complete methods of examination, and his book in every page reflects this. Never a work of minute anatomical or pathological detail, it is essentially a practitioner's book, and as such, a very satisfying one.

In the fourth edition chapters are added on the pulse, on coronary disease, on bradycardia, and on atheroma of the aorta. Sir William Broadbent has amplified the chapters on angina pectoris and on functional disturbances of the heart. At a time when there is so much study being devoted to the degenerations of arteries, and the whole

question of arterio-sclerosis is in a state of transition, it is not to be wondered at, if the chapters dealing with those subjects have scarcely the dogmatic force that is so characteristic of the book in general. The work of Mackenzie, which has excited much admiration, is adequately recognized. Finally, as has been often stated before, there is no book more satisfying to the practitioner; this has been amply proven by the sale which has already brought it into its fourth edition.

DISEASES OF THE EYE. By CHARLES H. MAY, M.D., and CLAUD WORTH, F.R.C.S., Eng. Ballière, Tyndall & Co, 8 Henrietta Street, Covent Garden, London; 1906.

This is an English edition of Dr. May's Manual of Diseases of the Eye, which has already passed through four editions in the United States.

Mr. Worth is associated with Dr. May in the production of the English edition.

The general system of the earlier editions has been adhered to, but a good deal of new matter has been added. The book is profusely illustrated, some of the prints being very good, and others extremely poor.

That the work has supplied a demand is evidenced by the rapidity with which the earlier editions have been exhausted. The main original work in the book is Mr. Worth's dissertation on Muscular Deviations, the use of his amblyoscope, and a description of his advancement operation.

J. W. S.

ELLIS'S DEMONSTRATIONS OF ANATOMY BY DISSECTION. Revised and edited by CHRISTOPHER ADDISON, M.D., B.S., F.R.C.S., 12th edition. New York: William Wood & Co., 1906.

Who that has taught anatomy in the dissecting room has not appreciated Ellis's Anatomy? Who that took an interest in the naked eye anatomy of the nerves has not studied Ellis's dissection with benefit. It was always a pleasure to read Ellis; the style was so good and the method of expression so clear, and so many new ways of looking at the various regions were disclosed, that for a teacher it was a treasure, though students found it hard and preferred the more simple yet less exact Heath. This 12th edition, edited and revised by Dr. Addison, known to us as an accomplished anatomist, keeps up the well earned reputation of Ellis. Much of the matter has been rearranged and much new matter introduced; many new illustrations have been added and

many of the old familiar plates, we are glad to see, remain. The order of dissection, as is usual now, commences with the back. We can heartily recommend this 12th edition of an old favourite. Any student who really wishes to work at anatomy will not regret having this book.

Medical News.

McGILL UNIVERSITY GRADUATES.

The following are the results of the midsummer examinations of the Medical Faculty of McGill University.

PRIZE LIST.

Holmes Gold Medal for highest aggregate in all subjects forming the Medical Curriculum:—R. S. MacArthur, Summerside, P.E.I. Final Prize for highest aggregate in the Fourth Year subjects: T. A. Lomer, B.A., Montreal, Que. Wood Gold Medal for best examination in all the Clinical branches: R. McL. Shaw, B.A., Penobsquis, N. B. McGill Medical Senior Prizes: First Prize:—F. B. Gurd, B.A., Montreal; Second Prize:—R. J. Monahan, Montreal. Honours in aggregate of all subjects. 1, R. S. MacArthur; 2, T. A. Lomer, B.A.; 3, R. McL. Shaw, B.A.; 4, A. W. Hunter; 5, O. S. Hillman; 6, C. S. Williams; 7, D. P. Hanington; 8, G. R. Mabee, Phm. B.; 9, F. B. Gurd, B.A.

PASS LIST.

FINAL SUBJECTS.

The following gentlemen, 92 in number, obtained the degree of M.D., C.M., from the University:—Adams, H. P., D.D.S., Danville, Que.; Allen, H. C. B., Cape Tormentine, N.B.; Arnold, D. R., B.A., St. John, N.B.; Auld, J. W., Covehead, P.E.I; Auston, J. B., Brighton, Ont.; Bercovitch, A., Montreal, Que.; Blake, E. A., South Stukey, Que.; Bonelli, V., Jr., B.A., Vicksbury, Miss., U.S.; Brown, G. T., Danville, Que.; G. H. Burke, Ogdensburg, N.Y., U.S.; Callbeck,A. DesB., Tryon, P.E.I.; Cameron, A. B., Lancaster, Ont.; Chandler, A. B., B.A., Montreal, Que.; Christie, H. H., Martintown, Ont.; Clarke, G. S., Dutton, Ont.; Conroy, B. A., Montreal Que.; Donnelly, J. H., Buffalo, N.Y., U.S.; Duggan, R. G. Hamilton, Ont.; Ewart, D., Ottawa South, Ont.; Field, B. R., Port Elgin, N.B.; Flegg, R. F., Ottawa, Ont.; Forbes, A. E. G., Little Harbor, N.S.; Fraser, D. R., Montague Bridge, P.E.I.; Fraser, T. B., Liverpool, N.S.; Fripp, G. D., B.A., Montreal, Que.; Gillies, G. E., Teeswater, Ont.; Gourlay, H. B., B.A., Montreal, Que.;

Green, T. B., B.A., Virden, Man.; Groves, Osler M., Carp, Ont.; Gurd, F. B., B.A., Montreal, Que.; Hackett, J. F., B.A., Meriden, Conn., U.S.; Hammond, J. F., Ironside, Que.; Hanington, D. P., Victoria, B.C.; Hardy, A. N., Allendale, N.S.; Hewitt, T. J., Montreal, Que.; Hill, R. C., M.D., Great Falls, Mont.; Hillman, O. S., Hamilton, Ont.; Holden, C. P., St. John, N. B.; Howlett, G. P., Ottawa, Ont.; Hunter, A. W., Durham, Ont.; Hunter, T. V., East Florenceville, N.B.; Johnson, B. F., Midland, N.B.; Joughins, J. L., Moncton, N.B.; Keddy, O. B., B.A., Milton, N.S.; Kelly, A. E., Meaford, Ont.; Kerfoot, H. W., Smith's Falls, Ont.; Layton, J. S., B.A., Oakfield, N.S.; Lomer, T. A., B.A., Montreal, Que.; Lyon, G. R. D., Ottawa, Ont.; MacArthur, R. S., Summerside, P.E.I.; MacCallum, D. G., Montreal, Que.; MacDonald, P. A., Alma, N.B.; MacLeod, J. M., Quincy, Mass., U.S.; MacNaughton, G. K., B.A., Black River, N.B.; McEwen, E. H., Vancouver, B.C.; McMillan, J. A., Finch., Ont.; Mabee, O. R., Phm. B. Vittoria, Ont.; Mair, W. L., Clinton, Ont.; Malcolm, D. C., St. John, N.B.; Margolese, O., Montreal, Que.; Mercer, T. C., Chillawack, B.C.; Michaud, J. N., Campbellton, N.B.; Monahan, R. J., Montreal, Que.; Mullin, J. J., Montreal Que.; Munroe, A. R., Woodstock, Ont.; Munroe, F. D., Moose Creek, Ont.; Nathan, D., Montreal, Que.; Parsons, W. H., Harbour Grace, Nfld.; Patterson, W. J., B.A., Moncton, N.B.; Payne, G. A. L., Leonora, British Guiana, W.I.; Peat, G. B., Andover, N.B.; Petersky, Sam'l., Vancouver, B.C.; Ralph, A. J., Phm. B., Montreal, Que.; Reilly, W. H., Montreal, Que.; Rilance, C. D., Montreal, Que.; Risher, F. O., B.A., Dravosburg, Pa., U.S.; Ritchie, C. A., B.A., Winnipeg, Man.; Robbins, E. E., Halifax, N.S.: Rothwell, O. E., B.A., Regna, Sask., N.W.T.; Shaw, R. McL., B.A., Penobsquis, N.B.; Sheahan, J. J. Haley's, Ont.; Sims, H. L., Ottawa, Ont.; Swift, T. A., Montreal, Que.; Tilley, A. R., Ottawa, Ont.; Turnbull, J. W., Springhill, Ont.; Walker, J. J., B.A., Ormstown, Que.; Walsh, C. E., Jordan Falls, N.S.; Weldon, R. C., Jr., Halifax, N.S.; White, J. H., Ottawa, Ont.; Williams, C. S., Tyne Valley, P.E.I.; Young, A. MacG., Millville, N.S.

ROYAL VICTORIA HOSPITAL.

Monthly Report for June.

Patients admitted, 294; patients discharged, 274; patients died, 22; Medical, 84; surgical, 131; ophthalmological, 27; gynæcological, 32; laryngological, 20.

Outdoor department.—Medical, 906; surgical, 830; ophthalmological, 317; gynæcological, 95; laryngological, 364. Total,2,512. Number of ambulance calls, 72.

At a meeting of the Medical Faculty of McGill University, on July 15th, the following resolution with reference to the death of the late Dr. Craik was passed.

"Resolved that the members of the Faculty of Medicine place on record their profound regret at the death of their colleague and late dean, Dr. Robert Craik.

"For the half century during which he has been connected with this faculty, as clinical assistant in the hospital, professor of Chemistry, registrar, treasurer, professor of Hygiene, and dean, Dr. Craik showed himself to possess original characteristics which mark the individual from the ordinary conventional type, and he has left a deep impress of this individuality on his students, his colleagues, and his faculty. As a professor he was lucid, interesting and impressive; as an administrator his career was charaterized by caution, thoroughness and energy. He brought with him to the councils of this faculty, the best traditions of the early strenuous years of McGill from his association with such able, unselfish and enthusiastic teachers as Holmes, Campbell, Sutherland and Howard.

"As the representatives of the faculty in corporation and on other executive boards of the university, the Montreal General and the Royal Victoria Hospitals, the Provincial Board of Health and the College of Physicians and Surgeons, he laboured unceasingly to promote the reputation and welfare of this faculty, and he always commanded interest and received respect and attention. Fluent and eloquent in his command of language, dramatic in his manner of expression, he elaborated argument or advanced criticism in a manner which carried his audience with him and almost compelled conviction.

"His intimate acquaintance with the requirements and working of medical charities caused his opinion to be much sought after and most valued. To no single member of the medical profession are the charities of Montreal more indebted than to the physician whose loss we deplore.

"In the death of Dr. Craik, Montreal has lost a public-spirited physician and this faculty a strenuous advocate and a counsellor of ripe judgment, and it will be long indeed before his kindly presence and his high personal qualities are forgotten by those who had the privilege of knowing him well."

At the Dundee Royal Infirmary a boy, 13 years of age, was admitted with an ugly wound in the wall of his heart, caused through the lad falling on a hay fork. Carefully following the course of the wound,

the surgeon sewed up the puncture, and the stitched heart is now reported to be doing its duty successfully.

The operation is not quite wholly without a precedent, for there have been a few cases of somewhat similar character in England within the last ten years.

In June, 1903, the Surgeons at the London Hospital accomplished an operation which became famous. They placed three stitches in the heart of John Long, who had been terribly wounded. Though at first the local doctor gave Long only half an hour to live, the operation proved successful, and Long recovered.

Twelve months later Dr. Somerville, of Leek, sewed up the wounds in the heart of a man who had stabbed himself twice with a penknife. Here, again, the patient recovered.

A few successful operations of the kind have been reported in Paris, Berlin, and St. Petersburg. In November, 1903, in Berlin, a doctor extracted a bullet from a young girl's heart.—*Exchange.*

The following gentlemen having complied with the requirements prescribed by the Quebec College of Physicians and Surgeons, have recently been licensed to practise medicine and surgery in the province of Quebec: Drs. Jos. T. E. Bousquet, Alf. J. Champagne, J. N. Perusse, A. B. Chandler, J. A. Cousineau, James C. Fyshe, Lucien Derome, R. W. Geddes, J. W. Mulligan, E. E. Robins, John J. Walker, J. A. Leduc, F. A. C. Scrimger, Raoul Lerose, Louis Verschelden, Odilon Beaudry, Zachary Lefebvre, A. Desjardins, Ariste Laurin, Arth. Denis, Henri St. George, D. Benoit, Arth. Charbonneau, T. A. Lomer, D. D. Macrae, Jos. O. Beauchamp, H. C. Church, Edgar Browning, Wm. A. Ainsley, B. Conroy, A. McG. Young, J. H. Mason, Nathan Schacher.

Miss Theresa Burla-Rigasso passed examinations for diploma in midwifery.

The Congress of the Societe Medicale de la langue Francaise de l'Amerique du Nord held at Three Rivers in June, was very successful. The opening address was made by His Honor Sir Louis Jette, while Hon. Lomer Gouin followed with another eloquent discourse. The medical congress was attended by about 225 members from all over Canada. Among those who attended the convention are three French gentlemen representing respectively the French Government, University of Paris, and the Institut Pasteur. This medical association was formed in 1902, holding their second meeting in 1904 and the congress in Three Rivers is the third. It is expected that the next meeting will take place in 1908.

Dr. Harold White, a graduate of McGill University, has been attached to the staff of house surgeons of the General Hospital, Ottawa.

Dr. A. B. Atherton, Fredericton, N.B., has been elected President of the Maritime Medical Association, meeting next year in St. John, N.B.

Dr. Fred. Richard, a graduate of McGill University, formerly of Chatham, N.B., has removed to Moncton, N.B.

Dr. Carlyle A. Porteous, Assistant Superintendent of Verdun Hospital, was married on July 11th to Miss Kathleen Constance Foster, daughter of Rev. Canon Foster. The ceremony took place at St. George's Church, Montreal. Dr. and Mrs. Porteous will reside at Verdun Hospital.

Dr. F. W. Marlowe, F.R.C.S., of 699 Spadina ave., Toronto, was married on July 10th, to Miss Florence Elizabeth Walton, of Thorold, Ont.

Dr. Alpheus A. Lovett, of Paris, Ont., was married at Burk's Falls, on July 11th, to Miss Selina Florence Bingham, daughter of the Rev. Thos. Bingham.

Dr. Albert H. Holliday, died on the 5th of July, at Traverse City, Mich. He was a native of Brooklin, Ont., and graduated in Arts from Toronto University, and in medicine from Victoria Medical College, Cobourg. Dr. Holliday practised at Belwood, Ont., till 1893, when he removed to Traverse City, where at time of his death he was president of the local Medical Association. He was in his 47th year.

Manuel Garcia, aged 102 years, the inventor of the laryngoscope, died on July 1, 1906, in London. He was born in Madrid, and adopted music as his profession, and it was in the course of his study on the production of the voice that he envolved the instrument that has had so wide a field of usefulness.

Dr. Fritz Schaudinn, whose name has lately become prominent in connection with his researches on the etiology of syphilis, is dead from septic infection at the age of 36. He held a position in the Institute of Tropical Diseases at Hamburg.

Dr. Nellie Skimin died at Toronto on July 6th, after a long illness. She was a gradnate of Queens' University from which she held the degree of Master of Arts, and had practised in Toronto for some years.

Dr. G. C. Campbell, a graduate of Dalhousie University, died recently from pneumonia. He had recently practised in Halifax, and was on his wedding tour when he contracted the illness which ended fatally.

Dr. James W. Chisholm was drowned while swimming at Big Glace Bay on July 13th.

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

WALTER B. CANNON, M.D., "RECENT ADVANCES IN THE PHYSIOLOGY OF THE DIGESTIVE ORGANS BEARING ON MEDICINE AND SURGERY." *American Journal of the Medical Sciences*. April, 1906.

Cannon's article is interesting both from a surgical and a medical point of view. In the following brief résumé only the facts bearing on surgical practice will be considered. Of the recent advances of which he speaks many are due to his own work which is now well known, especially that bearing upon the movements of the intestines as studied by means of the X-Rays.

With regard to the stomach he first draws attention to the fact that peristalsis occurs only over the pyloric half. The stomach may be divided into two compartments, physiologically speaking; the "cardiac reservoir" and the "pyloric mill," the functions of which are well indicated by these names. "In the pyloric portion, whenever the pylorus remains closed, the peristalic rings, moving from the middle to the end of the stomach, push the food into a blind pouch. Since the food cannot then escape through the pylorus, it has as its only outlet the opening in the advancing peristaltic rings. As the peristaltic waves recur in rhythmic succession the food is first advanced and then regurgitated over and over again before it reaches the end of the antrum.... It seems highly probable that the prevalence of pathological conditions in the pyloric end of the stomach rather than the cardiac end—the fact that the pyloric region is the ulcer and cancer-bearing region—is due to injuries which the greater activity of the pyloric portion may bring upon itself....It is thus evident that intragastric pressure gradually increases as the pylorus is approached, until the pressure may be three to five times as great as it is in the cardiac end." These observations, the author remarks, have a direct bearing on the operation of gastroenterostomy. Studies of animals subjected to this operation have shown that the pylorus, if it remains unobstructed, is the favoured outlet for the food; and with the pylorus normal the anastomotic openings are not used, unless they are made well towards the pylorus, where the intragastric pressure is high.

Another point of surgical interest which Cannon brings forward concerns the effect of operation upon gastric peristalsis. If enterostomy

be performed within ten inches of the pylorus, it has been observed that the pyloric sphincter remains firmly closed for a period of five to six hours. During this time food is absolutely prevented from leaving the stomach, even though during the major part of it peristaltic waves continually press the food up to the pylorus. This is the more remarkable in that normally food may begin to pass from the stomach within ten minutes.

As regards the small intestine, Cannon draws attention to the late discoveries of various enzymes and anti-enzymes, the latter being especially important. The function of these is supposed to be that of protecting the body from the destructive action of its own digestive ferments, and a suggestive point in this connection is, as Weinland has pointed out, that possibly gastric and duodenal ulcers are the result of a defective production of these anti-enzymes. Cannon dwells in some detail upon the various activities taking place in the duodenum, such as reflex control of the emptying of the stomach, the conditions attached to the flow of pancreatic juice and bile, the action and interaction of the ferments of this region; and he does so "because," as he remarks "the tendency is still strong to regard the duodenum as resembling any other part of the small intestine, to be lightly set aside by operation with little consideration of the disturbances and readjustments which such a procedure entails."

He goes on to call attention to the law of peristalsis, as enunciated by Bayliss and Starling some seven years ago; to wit, that the peristaltic wave is due to a local nervous reflex which produces contraction behind and relaxation in front of the point of stimulation; the effect of this mechanism is always to produce a forward movement of the food. This has a bearing upon the question of union of divided intestine. Cannon found by observation on animals, with the help of X-rays, that in end to end union no insufficiency of the gut followed, while on the other hand after lateral anastomosis there was always an accumulation of food in the chamber formed by the apposed loops. The cutting of the circular fibres in this operation destroys efficient peristalsis at the junction unless the circular muscles in both loops work in co-ordination. As they do not so act, at least for days, and probably for weeks following operation, lateral anastomosis is not so ideal an operation as end to end union.

It would seem from other operations that the nervous reflex in the wall determines that intestinal peristalsis must always be forward. Experiments on reversal of portions of the intestine by Mall and others give support to this conception of peristaltic action, for undigested waste always collects at the upper junction; nevertheless we have the well-known clinical evidence to the contrary afforded by "faecal vomiting,"

and, in fact, in animals in which the intestine was obstructed, the food has been observed by Cannon moving swiftly *backward* to the stomach along the course traversed in its passage from the stomach to the region of obstruction.

In connection with the large intestine, Cannon reminds us that in the proximal part of the colon anti-peristalsis is normal. The result of this is that the cæcum becomes a sort of churn. In this portion of the intestine absorption is great; in its fæces are still fluid or soft, while in the transverse colon they become hard. It has been proved that the ileocæcal valve will not allow ordinary fæces to pass back into the small intestine, but will allow fluids such as physiological saline to do so.

Cannon concludes his paper with certain general considerations. He gives a preliminary report of experiments which he has carried out lately, not yet published, upon the effect of etherization, cooling, drying, and handling on the movements of the stomach and intestines. Here it was found that neither the ether, nor the cooling of the viscera, nor the drying, checked to any marked degree the onward passage of the food. After handling, on the contrary, even most gently, within the peritoneal cavity or under warm salt solution, no gastric peristalsis was seen, and no food left the stomach for three hours. Fingering the stomach and intestines gently in air caused still greater retardation of the onward passage of the food, and with rougher handling in air no food passed from the stomach in four hours and then it emerged very slowly, and was moved through the small intestine with extreme sluggishness.

It has been found also that depressing emotions such as those of anger, distress, or even anxiety, not only check the movements of the stomach and intestines but also inhibit the secretion of gastric juice. Further, nothing is more remarkable than the responsiveness of the canal to conditions of general asthenia which animals exhibit when afflicted with distemper. All day long food will lie in the stomach without the slightest sign of a peristaltic wave passing over it. In asthenic states leading to such conditions the handling of the stomach and intestines can only cause an intensification of the effect of general bodily weakness and deepening of the state of inactivity.

The conclusions which surgical practice may draw from these considerations are plainly not far to seek. E. W. A.

E. H. Bradford, M.D. "The Hyperæmia Treatment of Congested and Inflamed Tissues." *Boston Med. and Surg. Jour.*, June 14, 1906.

Bier claims that the true antiphlogistic state is not induced by anæmia, but, on the contrary, by increasing the amount of blood in the affected

parts. This hyperæmia can be produced by three different methods, by dry heat, by constriction and by suction. The dry heat gives us the active hyperæmia, the constriction and suction the passive hyperæmia. These three varieties of application of the hyperæmia treatment are considered as applicable to different conditions. The suction hyperæmia is especially applicable to brawny and septically congested tissues, as is seen in cellulitis, phlegmon, etc. The constriction hyperæmia is applicable to the less virulent infections, as those of tuberculosis, and especially of benefit in blenorrhagic joints, while the active hyperæmia is more applicable to what may be termed the less active forms of inflammation, as in arthritis nodosa. The hyperæmia method of treatment in its various forms furnishes important means of increasing the flow of blood to the skin and deeper tissues. By it we can stimulate the circulation more easily than by previous methods. It has not been shown that heat acts in any other way than by stimulation of the circulation. It has been suggested that sluggishness of the lymph circulation may be overcome by suction and it is even possible that by the application of slow heat for a length of time cell activity may be promoted. In all probability these procedures will be improved upon both by mechanical devices and by combination of two or more methods. A specimen page of the various forms for suction treatment is given. The writer believes that the hyperæmia treatment is not only one which deserves assured position in the treatment of certain affections which are not readily amenable to the methods previously used.

CHARLES L. SCUDDER, M.D. "Dislocation of the Outer End of the Clavicle." *Jour. A. M. A.*, July 7, 1906.

This dislocation is not uncommon and presents varying degrees of deformity and disabling symptoms. It is produced by a blow directed from behind and above. The pathology of this dislocation consists of a rupture of the acromioclavicular ligaments in all cases, sometimes the conoid ligment is torn in incomplete dislocations, in complete cases the conoid ligament is always torn, and both the conoid and trapezoid ligaments are usually torn in complete cases. Their experiments on the cadaver were carried out by the clavicle being held in a vise and the blow directed from above and behind in all cases. In one subject there resulted a fracture of the coracoid and spinous processes of the scapula with a slight dislocation of the acromioclavicular joint. In this instance there was no rupture of the coraco-clavicular ligaments. In each of the other two experiments only a slight dislocation was effected by a blow

from above after division of the superior and inferior acromioclavicular ligaments, but when the coracoclavicular ligaments were divided the dislocation became at once very evident and complete. The writer formulates the treatment of a specific case as follows. If the dislocation is one of moderate degree, it should be treated by simple retentive apparatus. If the dislocation is extreme, in which case it is probable that the coracoclavicular ligaments are torn, a suture of the parts is indicated. If the retentive apparatus does not hold cases of the first class, then sutures should be employed. In order to secure a firmer hold on the outer end of the clavicle a suture should be placed so as to make traction on the clavicle from below in the direction of the coracoacromial ligament. The suture should be passed through the clavicle and coracoacromial ligament. The patient in the dorsal position is best as it removes the weight of the upper extremity and so assists in the healing of the parts.

E. Wyllys Andrews, M.D. "A Study of Five Cases of Subcutaneous or Concealed Rupture of the Intestines Treated by Laparotomy." *Surg. Gynec. and Obstr,* June, 1906.

Two out of the five died, one on the table before operation, the other from septic peritonitis, the operation being done several days after the injury. As regards the mechanism of the injury the writer is against any bursting theory from internal pressure of the fluids or gases in the gut, and believes the bowel is cut in two by the angle or promontory of the sacrum against which it is found when the anterior abdominal wall is pushed against the spine.

External bruising is often absent. Shock and collapse may be absent early but rapidly supervene. Pain is constant and progressive tenderness is always marked in a short time. Vomiting is constant, becoming faecal, but not always a very early sign. Rigidity, rather than distension, appears early. When injury to bladder, kidney, spleen, or liver can be excluded, a patient suffering severely after a hard blow on the abdomen should be suspected of having a ruptured bowel and opened early. The rent in the bowel if large is closed by Connell's stitch, if small by either a Lembert or Czerny. He irrigates the abdominal cavity most copiously by means of a triple-nose nozzle, one being placed in the pelvis, one below the spleen, and one below the liver.

W. L. B.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

DUTTON (the late J. E.) and TODD, J. L. Reports of the expedition to the Congo, 1903-5. *Liverpool School of Tropical Medicine, Memoir XVIII.*

The present memoir contains a good deal of information which was given by Dr. Todd in a lecture before the Montreal Medico-Chirurgical Society in the early part of this year, which was reported in the current number of this journal. The first report deals with gland palpation in human trypanosomiasis, and is based on an examination of gland juice from 250 cases of early and advanced trypanosomiasis. The figures given show that gland puncture is by far the most efficient method of demonstrating the presence of the parasite; it is true that in advanced cases the blood, and, where pronounced mental symptoms are present, the cerebro-spinal fluid, gave a high percentage of successful examinations. The post cervical glands lend themselves best to examination, although the authors are not convinced that there is any essential difference in groups of glands.

To determine whether enlarged glands, where no obvious cause is present, really represent an infection by the trypanosome, a large number of natives were inspected, and the observers concluded that enlarged cervical glands under these circumstances, do definitely point to trypanosomiasis; and they further determined that enlarged cervical glands, without obvious cause, do not as a rule occur in districts where trypanosomiasis is absent The practical conclusion from this is that early cases of trypanosomiasis have enlarged glands, and can generally in this way be detected.

With a view to lessening the spread of sleeping sickness, which is easily proved to follow the main tracks of trade, the members of the expedition believe that the establishment of posts of inspection on these lines of traffic is necessary, that thereby natives apparently healthy, who have enlarged cervical glands could be prevented from going into uninfected districts and could be removed to infected regions.

The concluding part of the report deals at some length with the distribution and spread of sleeping sickness in the Congo Free State, and is accompanied by maps showing graphically the presence of the disease in different districts as far as is at present known. None of the suggested predisposing causes could be proved to be actually potent. The geographical distribution of the disease at different periods, and its great

increase along routes of native travel are indicated on the maps, and show that in the author's words the disease "spreads slowly but is carried rapidly" the rivers, which form the route of travel, being generally the lines of least resistance. In the absence of census figures, they are unable to give definite figures but the terrible statement is italicised that in certain already well-infected districts "a third of the people inhabiting these districts will probably die of trypanosomiasis." In view of this devastation, no effort seems too great that will succeed in stopping the ravages of the disease: the authors are fully alive to the impossibility of any but the most relative quarantine, but they point out hopefully that even the native mind has adapted itself to the idea of segregation of the sick, and has grasped the fact that swelling of the cervical glands is the danger signal which indicates the future development of the disease.

The remainder of the memoir is devoted to several entomological studies upon new varieties of parasites found in monkeys, and upon the structure of certain biting flies.

ROBBERS. "On Pneumococcus Peritonitis," *Deutsche Med. Woch.*, 7 June, 1906.

The author points out that the first case of this condition was described by Bozzolo in 1885, and that, notwitstanding its comparative frequency it is yet not a well-known condition. He divides the cases into the circumscribed and the diffuse, of which the former is much the commoner. Robbers describes two cases, a girl of 6 and a woman of 24 which recovered. The condition is much more frequent in children than in adults, and nearly always in females. It commences with fever, vomiting, diarrhœa and headache, its onset being very sudden. The vomiting is considered due to the early irritation of the diaphragm. The author describes the appearance of the pus and the organs, but we confess that in these there does not seem to be anything clearly characteristic: the pus is generally not offensive, and the bacteriological findings are, of course, characteristic. The differential diagnosis from appendicitis is not always easy. The unilateral nature of the tenderness and rigidity and constipation favor appendicitis. Rigidity was absent in one of Robbers' cases. The diagnosis may suggest typhoid, tuberculous or the other acute forms of peritonitis.

As to the origin of this form of peritonitis the extension from the pleura is perhaps the most likely: in both these cases there was some degree of inflammation in the thoracic cavity. Yet importance must be attached to the fact that in 58 cases, 51 were in females, and certain

cases have pointed very definitely to the tubes, especially a case such as Frommel's where he found pneumococcus peritonitis after extirpation of a pyosalpinx, although the women had never had pneumonia. The search for pneumococcus in the genitalia has afforded no definite positive results. It must be granted that pneumococci may come from the air-passages and mouth to the intestine, and pneumococcus peritonitis has followed perforation. The question is then very doubtful, but the reviewers own experience has been that cases he has seen have come evidently by extension from the pleura.

The prognosis is generally speaking, good, better in children than in adolescents and Robbers believes that cases are cured spontaneously but yet he does not favour an expectant policy in treatment. Robbers advises laparotomy and drainage. The diagnosis being made from the blood or from the pus at operation the author favours the use of serum. As a foot note the author adds a third case in a woman of 31, with operation and recovery.

Prof. H. Senator. "On the Dietetic Treatment of Gastric Ulcer." *Deut. Med. Woch.* Jan 18, 1906.

Hitherto the generally accepted method of treating gastric ulcer, particularly those with recent haemorrhage, has been by rest and careful dieting. Small quantities of food, not irritating in character is administered, or food by the mouth is withheld altogether and replaced by nutrient enemata.

Recently Leubartz has condemned this method, asserting, that the restricted diet depresses the patient, who is often anaemic, and postpones the healing of the ulcer. Leubartz recommends a diet rich in albumen in order to combine with the hydrochloric acid of the stomach which is usually present in excess. He advises eggs in increasing numbers, milk, then sugar and towards the end of the first week finely divided meat up to 70 grams daily. Even after a haemorrhage this diet up to 200 or 300 calories is allowed, together with strict rest and an ice-bag to the epigastrium, and it is asserted that under this treatment healing is more rapid and the strength regained more rapidly than with the older method.

Leubartz's method is approved by Wirsing and Mickowski, although the latter writer advises the old method of treatment for a few days after a haemorrhage.

Senator believes that the advantages of both methods can be combined by a diet which (1) does not irritate or disturb the stomach; (2) allays irritation and especially does not induce haemorrhage; (3) combines

with the excess of irritating acid usually present; (4) is easily digested and nutritous. Such a dish may be obtained by combining gluten, fat and sugar with small quantities of albumen. Senator has recommended gluten for 30 years in febrile conditions as of considerable value as a food, and especially as a means of conserving albumen. The gelatine in this preparation may also act in checking haemorrhage. The food value of fat and sugar are well known, and fat possesses the further advantage of combining with excessive acid in the stomach.

In hospital Senator orders in recent bleeding ulcers 15 to 20 up to 150 to 200 grams of pure white gelatine decoction with 50 elaeosacchari citri warmed before use, of which a teaspoonful is taken every 15 or 30 minutes in urgent cases. (3) Butter and cream are given in small quantities frequently, at least 30 gr. butter and ¼ liter cream in 24 hours. If butter is not taken readily it may be given in small frozen morsels, and cream may also be frozen with or without sugar.

Naturally when no bleeding follows the diet is increased, milk, beaten eggs, and finely divided meat being used as recommended by Leubartz.

Gelatine may be administered in the forms of calves foot, isinglass &c. Salad oil may also be substituted for butter but as it sometimes induces vomiting it is best avoided at the outset of treatment. The usual medicinal agents should be employed with the above dietetic measures when indicated.

DR. SIEGFRIED TAUBER. "The Serum Treatment of Croupous Pneumonia." *Wiener Klin. Woch.* March 15, 1906.

Nine cases of pneumonia treated by Romer's serum are recorded. This serum first used in serpiginous corneal ulcers, prepared by Merck, is bactericidal and not antitoxic. The dose is 10 to 30 cc. Injected into the muscles, it produces no local symptoms.

Nine serum cases were selected out of 46 under observation.

Five cases due to Friedlander's bacillus, B. Welchi and M. Catoriboles (Pfeiffer) were quite uninfluenced by the treatments, as well as a case of tubercular pneumonia.

In the nine cases defervescence took place in 10 to 15 hours, and was noted in two cases after the first injection, in two after the second, and in one after the third.

Subjective sensations and the general condition improved almost immediately. Blood pressure in a serum case rose from 46 to 70 mm. after injection.

These observations agree with others, and in spite of the difficulty of drawing conclusions from therapeutic measures in so many sided a di-

sease as pneumonia, they are certainly encouraging and deserving of further trial.

F. C. SHATTUCK. "The Dietetic Treatment of Nephritis."

This article largely reflects and emphasizes the teaching of von Noorden.

Acute nephritis is of all grades of intensity, varying from a trivial process, the only danger of which is lest it become chronic, to one which suddenly and totally disables the kidneys.

Milk diet and copious supplies of water are in many cases likely to increase the difficulty owing to the incapacity of the glomeruli to filter off the excessive fluid. Recovery, often complete and lasting, is the rule provided a brief period of danger can be tided over. Starvation is now considered the best dietetic treatment of acute nephritis, absolute starvation for a few days in severe cases with scanty or suppressed urine and œdema of rapid onset and growth. In cases of less severity, about a quart of milk can be given daily with cereals and fats in moderate amount. The phosphoric acid which may be difficult to excrete may be precipitated by the addition of small quantities of calcium carbonate. The quantity of food is to be gauged rather by the amount of urine than by the quantity of albumen, due consideration being also paid to the general nutrition and the gastro-intestinal digestive power. Animal broths are almost the last things to be allowed, being of little nutritive value, and containing extractives which are dangerous to those liable to renal intoxication.

In acute exacerbations of chronic conditions the dietetic management is conducted on similar lines, although complete starvation may not be as safe owing to the impairment of general nutrition.

For therapeutic purposes cases of chronic nephritis may be divided into two classes—those with and those without dropsy. Where dropsy is present, especially if it is mainly cardiac, limitation of liquids, including water, is usually important. When water is excreted with difficulty increasing the blood mass merely increases the work on a heart already often overburdened. In such circumstances a relatively dry diet is advisable, and also in the contracted kidney limitation of fluid is often important to prevent undue strain being thrown on the heart and so hastening the period of defective compensation.

von Noorden's varied diet, with a fair amount of proteid is recommended, and no reason exists for using white meats in preference to red.

Green vegetables and fresh fruits are almost without exception permissable and desirable. Celery, which is forbidden by v. Noorden, is

not regarded as injurious. No reference is made to radishes, which the German author so strongly condemns.

Shattuck has no experience with the restriction of salt, but considers further clinical evidence desirable.

The writer concludes that diet is of more importance in the treatment of nephritis than drugs, and that such drugs as are useful act more on the heart than the kidneys.

In chronic forms of nephritis we seek to lengthen and lighten life. Dietetic restrictions should be, in the main, quantitative rather than qualitative. Alcohol in moderation is not necessarily a poison and may be an aid to digestion.

Excess of proteid and not proteid itself is injurious to diseased kidneys, and a varied diet rather than a monotonous one is more likely to promote general nutrition and especially to maintain that of the myocardium.

DUNGER. "On Uræmic Neuritis." *Muench. Med. Wochen.*, April 17, 1906.

The author notes a case of neuritis of the left brachial plexus, which rapidly involved, especially, the median nerve: the man, 27 years old, had an acute hæmorrhagic nephritis with fever, œdema, headache, restlessness and much reduced urine: the onset of the neuritis was about 3 or 4 weeks after the onset. The accuracy of the diagnosis of neuritis was supported by the rapid onset, the severe pain and tenderness, the course, the paresis and muscular atrophy and the paræsthesia limited strictly to the distribution of the nerve-trunk. Dunger points out its relationship with the cases of neuritis in the dyscrasias, and the gouty and diabetic forms. In the region of the nerve, œdema lasted long after the œdema elsewhere had disappeared. The author thinks that so well-marked a case as this should suggest that pain in nephritics may occasionally be of this nature.

NEUHAUS. "A New Test for Santonin in Urine." *Deutsche Med. Wochen.*; No. 12. 22 March, 1906.

The test is simple, and is stated by the discoverer to be very accurate. The urine is added to Fehling's solution, which takes a dark green colour, on further addition a dark violet red appears, and if an acid, preferably acetic acid be added, an emerald green colour is found. The test is most easily produced in the urine of children, and the dark violet-red colour is the most dependable part of the reaction.

ANNAND (W. F.) and BOWEN (W. H.) "Pneumococcus Peritonitis in Children." *Lancet*, June 9, 1906.

These authors find 91 cases under 15 years of age, and their conclusions are that the disease is sometimes secondary to pneumococcus infection in lungs, pleuræ or middle ear; in the great majority of cases they think the disease comes from the bowels. Their classification and treatment coincide with those of Robbers.

RICHARD HELLER (Salzburg): "The Highest Temperature Yet Recorded." *Münch Med. Wochenschrift.* No. 23. June 5, 1906.

The patient, a student in a girl's school, where a number of scholars were ill with influenza, was seen in a febrile attack. The evening of the first day of illness the temperature rose to 44° C. During 6 days it was repeatedly observed 43½°C or higher and on 5 occasions during 2 days, 45°C (113 F.) With this there was a pulse of 110, and all possible care was taken by the use of various tested thermometers to prevent error. Recovery was complete and rapid.

J. McC.

OBSTETRICS.

UNDER THE CHARGE OF J. C. CAMERON AND D. J. EVANS.

BRODHEAD, G. L. "Treatment of Toxæmia of Pregnancy." *Amer. Jour. of Obstet.*, July, 1906.

The author believes that toxæmia of pregnancy is due to a disturbance of the nitrogenous metabolism. He reviews the work of Ewing, Stone, Edgar and Williams. The toxæmia is due to the failure of oxidizing capacity on the part of the liver. The clinical manifestations vary from mild vomiting, which should be regarded as a mild toxæmia, to acute yellow atrophy. Ewing believes that the systematic study of the urine will show that unoxidized proteid derivatives are invariably present in comparatively early stages of the severer cases. The liver changes develop first after which the kidneys are affected.

He quotes Stone as believing that eclampsia and acute yellow atrophy are the same disease. He states that we must expect to find in the toxæmia of pregnancy an excess of ammonia or amido-acid nitrogen, together with a loss of urea nitrogen. Both Ewing and Stone call attention to the unreliability of the hypobromite method as a final test for nitrogen. He quotes Williams' well known paper on pernicious vomiting of pregnancy, in which condition the ammonia co-efficient

is greatly increased, sometimes rising as high as 30 to 40 per cent, whereas 3 to 4 per cent. is normal; 10 per cent. being the danger limit. Williams believes that in the former condition the ammonia co-efficient is wonderfully elevated, while in eclampsia the ammonia co-efficient is the same.

The author is convinced that the examination of the urine for evidence of disturbed nitrogenous metabolism will enable an early diagnosis to be made. He classifies all cases of toxæmia as follows:—

1. Toxæmia with persistent vomiting.
2. Toxæmia without persistent vomiting without convulsions.
3. Toxæmia with convulsions, or eclampsia.

Treatment he divides into, (1) gynæcological, (2) hygienic and dietetic, (3) medicinal, (4) obstetrical.

1. *Gynæcological Treatment*:—Under this heading he considers the correction of abnormal conditions about the urogenital canal.

2. *Hygienic and Dietetic Treatment*:—The usual rest in bed, warm baths, and milk diet may be employed. He mentions as being useful peptonized milk, clear coffee, chicken, oyster and clam broths, beef juice, liquid peptonoids, and panopepton. Rectal irrigation with saline solution every six hours followed an hour later by a nutritive enema of 4-6 oz. may be employed in severe cases with benefit. He gives as a useful formula the following: The whites of two eggs; whiskey or brandy oz. 1; a pinch of salt and peptonized milk to make oz. 6.

3. *Medicinal Treatment*:—Morphin should be reserved for severe cases, if used at all. Calomel is recommended as being useful, followed by the use of sulphate of magnesia. The use of alkalies on theoretical grounds may be recommended.

4. *Obstetric Treatment*:—He divides obstetric treatment into (1) dilatation of the cervix, and (2) emptying the uterus. He mentions that mere dilatation of the cervix sometimes relieves these cases of vomiting. If interference is to be followed by good results, it must be done early. As indications he considers that where acetone and diacetic acid are present, and constantly increasing in amount, or where the ammonia co-efficient is high, the operation is demanded in order to save the patient's life.

He then discusses the toxæmia of pregnancy without persistent vomiting and without convulsions. The symptoms being chiefly those of a high grade toxæmia. Pain and tenderness in the epigastric or right hypochondriac region are marked symptoms.

Nitrogenous food must be reduced to a minimum. Milk diet is recommended. Pot. bitart. oz. ii to a quart has given excellent results. He also employs soda bicarb, gr. 10 four times daily. The bowels

are to be kept well open. He speaks well of colon irrigation with large quantities of saline solution. Intravenous saline infusion may occasionally be employed in suitable cases. He would reserve venesection for plethoric cases with scanty urine secretion where convulsions seem imminent. Where treament fails to relieve the condition labour should be induced. He prefers hydrostatic dilating bags to the use of bougies, for the induction of labour.

The author then discusses the treatment of toxaemia with convulsions or eclampsia, quoting very fully from authorities, chiefly American, as to the use of chloral, veratum viride, and morphia, but nothing new has been added to our knowledge of this contribution. He believes that Bossi's dilator is a dangerous instrument. He sums up his treatment of eclampsia as follows: During the eclamptic seizure administer chloroform and oxygen if possible. Prevent the patient from biting her tongue, and from injuring herself from blows or falls. If the pulse is full and strong with tension, give the Squibb fluid extract of veratrum viride, minims x-xx, hypodermically, and repeat in doses of v every half hour until the pulse is reduced to 60. If the Norwood's tincture is used, give minims x-xx and repeat in doses of x every half hour until the pulse is reduced to 60. In cases of collapse, use whiskey, morphine and atropine hypodermically. If the pulse is weak and feeble, rely chiefly on chloral and bromides by rectum in doses of a half to one drachm of each. Where the pulse is strong, use veratrum as indicated, combined with chloral by rectum.

If the patient is unconscious, move the bowels by croton oil, minims 1 to 2, given with olive oil, one drachm, on the back of the tongue. If this is not efficient, give a high enema of sulphate of magnesia and castor oil, of each one ounce. If the patient is conscious, give mag. sulph., two drachms, every fifteen minutes until one ounce has been given. Then, if necessary, use the high enema of mag. sulph. and castor oil. A hot pack should then, be given the colon should be irrigated with several gallons of saline solution and several quarts left to be absorbed. Intravenous infusion should be reserved for the very severe cases. Venesection, when labor has not yet begun, may be used to advantage in robust patients with a full pulse, 12-16 ounces of blood being removed. If, however, the patient is about to be delivered, a moderate loss of blood can be allowed in the third stage, and, if necessary, venesection can be performed after delivery. To decrease arterial tension, and as heart stimulant, diuretic and diaphoretic, nitroglycerine is also of great value, while caffeine and strophanthus are second only to nitroglycerin.

Obstetrical:— If labour has not commenced, a modified Champetier de Ribes' bag should be introduced, and the cervix should be softened and dilated by the use of these bags. When the cervix has been well dilated, complete dilation by the hand, and deliver by forceps or version.

If the cervix cannot be dilated by ordinary methods, Duhrssen's incisions or Cesarean section should be advised, but, unless the operator feels perfectly able to perform these operations, it would be better, we believe, to rely on medical treatment alone.

If labour has already begun, but the cervix is long and rigid, use the bags for softening and dilatation. If the cervix is soft and dilatable, complete dilation manually and deliver by forceps or version.

The one fact above all to be kept in mind at all times, is, that in climination lies the hope of the patient's salvation.

D. J. E.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The sixteenth regular meeting of the Society was held Friday evening, May 18th, Dr. F. R. England, President, in the Chair.

The paper of the evening was read by Dr. Royal Whitman, of the Medical Department of Columbia University, New York, the subject being "Remarks on the Weak Foot, Commonly Known as Flat Foot; with Especial Reference to the Principles of Curative Treatment."

This paper was discussed by Drs. Gilday, Bell, Sir William Hingston, Mills, and others. There were 92 members present.

The seventeenth regular meeting of the society was held Friday evening, June 1st, Dr. F. R. England, President, in the Chair.

SPINTHARISCOPE.

J. W. Stirling, M.B., demonstrated this instrument, which is a modification by Gotch of an apparatus brought out by Crooks to demonstrate the radiations of radium. The instrument is of marked diagnostic value in the appreciation of light from the human eye. The results of the old test, namely, the standard candle, were always more or less haphazard, for, as is easily understood, any candle varies from time to time. The instrument consists essentially of a small particle of radium attached to a small rod in the interior of the tube. Behind it there is a small screen covered with zinc sulphide. At the other

end of the tube is a convex lens with a screw by means of which you can alter the focus. In the back is another small rod which one can slide up and down which leads to the particle of radium. A scale of figures runs up both rods, by means of which one can gauge the patient's ability of perception of light.

Dr. F. R. England presented a case for diagnosis, which was discussed by Drs. Brown, Lapthorn Smith, and Gordon.

UTERINE FIBROID.

Wm. Gardner, M.D.—Modern surgical technique has made the operation for the removal of uterine fibroids so successful that opportunities for the exhibition of specimens are quite common. The exceptional character of this specimen, however, makes it of unusual interest. The patient, a single woman, aged 41, whose menstruation had been regular and painless, with moderate flow, lasting three days, complained of pain of colicky character referred chiefly to the right lower quadrant of the abdomen. She first noticed a lump last May, but within the last two or three months it has rapidly increased and become somewhat painful. Examination showed the abdomen to be irregularly enlarged, the principal area presenting anteriorly an elastic feel, giving rise to a faint suspicion of fluid. Operation showed a multinodular fibroid of the uterus weighing nine and a half pounds. The main mass was attached to the right border and cornu of the uterus. This it was that presented the elastic feel referred to. Obviously there had been torsion of the mass, and the pedicular attachment being thick and firm, the uterus itself and its blood vessels must have been in the condition of torsion. This condition of interference with normal circulation was doubtless the cause of the rapid increase of size and peculiar condition which existed.

On making an incision into the main mass, the knife entered a large thick-walled rough cavity filled with a thick brownish black fluid. The ceptional features of the case are the rapid growth as opposed to the ordinary slow development of fibroids, and the exceptional intensity of the pain. The rapid growth, however, quite corresponds with the history of so-called cystic fibroid.

W. Gardner, M.D.—With reference to the rate of growth of these tumours it is true that in a proportion of cases after menopause the tumour undergoes a process of senile atrophy with the organ from which they grow. But there are many exceptions. The last tumour of this kind I had to deal with was in a patient who had ceased to menstruate for several years, when the tumour grew rapidly, and oper-

ation had to be done. Until not very long ago such patients were encouraged to bear their ills with the hope that menopause would bring relief. I am quite in accord with Dr. Smith in the opinion that in almost all cases uterine fibroids should be removed early while the patient is in good condition and before degenerative processes have set in. These degenerative processes are much more common than is usually supposed.

Dr. McCrae showed a specimen of Lithopædion.

W. Gardner.—The chief interest in this specimen is that in some cases natural processes, unaided by operation, can dispose of the condition. It is well known that in the very early cases of ruptured tubal pregnancy and tubal abortion the peritoneum can dispose of the ovum and whatever of blood may have been exuded, when the quantity is small, these patients having only a moderate degree of pelvic symptoms for a time.

Dr. Lockhart showed the society some time ago a specimen of lithopædion he had removed by operation. This specimen was of especial interest to myself. In this patient, over twenty years ago, Dr. D. F. Gurd and I diagnosed extra-uterine pregnancy and we treated her with strong faradic electric currents, a method of treatmnt which at that time had a certain amount of vogue. Lawson Tait, that great pioneer in gynæcological and other surgical operations had just begun to exploit his brilliant operation for extra-uterine pregnancy, but it was not yet universally accepted. Our patient got comparatively well for a time, but a mass persisted in the pelvis and she was subject to paroxysms of pain.

The eighteenth regular meeting of the society was held Friday evening, June 15th, Dr. F. R. England, President, in the Chair.

The officers for the ensuing year were elected as follows: President, Dr. F. G. Finley; Vice-President, Dr. Wesley Mills; Secretary, Dr. A. H. Gordon; Treasurer, Dr. A. T. Bazin; Trustees, Dr. J. M. Jack, Dr. H. S. Birkett and Dr. James Bell.

The address of the evening was delivered by Baron Takaki, the Medical Director of the Japanese Navy.

BERI-BERI.

Baron Takaki took up the subject of Beri-Beri and his connexion with its extermination in the Japanese Navy. In Japan the disease is called Kak'ke, which means "leg trouble." It has been known there for many centuries, at least more than twenty, and during the last three hundred years has been most prevalent in the chief cities of the

country and also the old towns. The disease is also found in Formosa, Corea, the southern part of China, Borneo and the Philippine Islands, slightly in India and also in some parts of Brazil and South America. Europeans have also contracted the disease and isolated cases may be found in seaport towns, as Liverpool, etc. There are three forms, the acute, subacute and chronic, the latter being rare. In ascertaining the cause of the disease in connexion with the navy, the Baron followed out many investigations and experiments and at last came to the conclusion that the food supplied to the men had much to do in rendering them susceptible to the disease. These experiments were extremely interesting. Taking the men at different stations the proportion of nitrogenous food to the carbo-hydrates was graded and the results carefully noted, the proportion being from 1 to 17, to 1 to 32. It was noted that in this latter proportion the occurrence of cases of beri-beri was small, and as the scale was lessened the cases were greater. Previous to this experiment investigations had been made with regard to the cabins of the men, the clothing, their occupation, the temperature or climate, rain-fall, etc., but with no result whatever as to the prevalence of the condition. The trouble now was to convince those interested that the diet was at fault. An opportunity presented itself when a detachment of soldiers was sent to the northern part of the island, on the Russian frontier, and, after considerable trouble, the Baron was permitted to instruct the doctor of the regiment in his method of diet. He failed, however, to carry out those instructions and 16 men were lost out of 160. Later, the right proportion of barley and rice was sent to them and no more cases developed, those already ill rapidly recovering from the disease. The doctor in charge of this detachment then set about himself to contract the disease and, after a diet of boiled rice with a small quantity of table salt for seven days, typical symptoms set in, and at the end of a fortnight he was very ill; he recovered slowly. On board ship it was easier to keep track of the disease as no outside conditions interfered. In one instance, where the ship had been cruising some 280 days, there was serious doubt that the ship would ever reach port, so many of those on board were down with the disease. As soon as she arrived and the men could now get bread, fresh meat, eggs, etc., improvement of the men set in next day, no new cases developed and all recovered in four weeks. On another vessel, taking the same route but supplied with a more mixed diet, no cases developed.

After much trouble a new diet was instituted in the navy, and from that time the number of cases decreased until the disease was completely exterminated. The men increased in body weight, the sick rate de-

creased and climatic conditions of cold and heat did not affect the men as formerly. The improved condition of the men was manifest in the successes of our war with China, and later in the Boxer trouble, and lastly in the war with Russia, when more than 30,000 men kept their health excellently and showed a sick list much less than in time of peace.

Medical science can do much for the advancement of a country. Had the Japanese navy remained as it was twenty-six years ago, it could not have withstood the wars it has passed through and would have been beaten by disease and not by the enemy.

Japanese medical education is, generally speaking, of the German school, and all medical students are taught the German language as an extra subject, and nearly all our post-graduates go to Germany. As, however, our relations with English countries are most useful to us all our youth (that is, those in the high schools) are taught the English language, and during the last three years in one medical school the English language is taught as an extra subject. With a better command of English we will be in a position to inform our English *confrères* of our work in Japan, and will be better able to understand that done in English countries.

A vote of thanks was proposed by Professor Girdwood, seconded by Dr. Shepherd, and passed to Baron Takaki for his kindness in addressing the society.

FRAGMENTS OF RUBBER CATHETER IMBEDDED IN PROSTATE.

JAMES BELL, M.D.—The patient from whom this body was taken was a man aged 72, who came to hospital on May 5th, suffering from retention of urine since May 3rd. He first suffered from retention eleven years previously, and again once or twice since. About three years ago he had an exceptionally bad attack, and a catheter was passed with some difficulty and bleeding. When he came to hospital the bladder extended up to the umbilicus; it was emptied by a rubber catheter, except on one occasion when a silver tube was used and nothing was felt. On the 14th of May a suprapubic prostatectomy was done, when in the right half was found this piece of old rubber catheter imbedded deeply in the substance of the prostate. The prostate weighed 150 grs. The patient did well. This piece of rubber catheter must have been left behind three years previously. There had been some bleeding during the attacks of retention and while in hospital there was a lot of blood in the bladder with large clots. The patient was also toxic.