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NOTES ON SOME AFFECTIONS OF THE BRAIN.*

By W. S. MORROW, M.D.

Among all the highways and by-ways of medical science, I know of none in which medicine, surgery, physiology and pathology are advancing hand in hand with a greater sense of mutual dependence than in those of cerebral localisation. I make localisation prominent at the beginning of this paper, because it is the standard about which we must rally in this department of medicine, if we ever wish to drive out empiricism and to take possession in the name of science.

The first great step in scientific localisation was the discovery of the centre of speech by Broca, some thirty years ago, in the third left frontal convolution.

I remind you of this, not only because of its historical importance, but because disturbance of this centre was a prominent symptom in the first two cases I wish to relate.

My first case shows how aphasia may, for a time at least, be the only definite symptom of an organic affection of the brain.

W. G., aged 38, first consulted me in March, 1893, complaining of headache and occasional nausea. He also had a macular rash and gave a history of syphilis dating back some fifteen years. I prescribed iodide of potash, which he took rather irregularly, but with considerable benefit. At the end

* Read before the Montreal Clinical Society, Dec. 9th, 1893.

of three months, while playing at the piano one evening, he suddenly found himself unable to pick out the right notes. When he turned to tell his wife he mumbled something she could not understand, and throughout the evening he was not able to put many words together and sometimes used the wrong one.

He showed no symptoms of weakness, but his face twitched several times, and when he went to bed his wife thought he moved more than usual, as if restless.

The next morning he was sick at his stomach and his head ached, but he was able to come to my office and showed no signs of weakness. He walked all right, could move his arms freely, and his face looked symmetrical.

When he started to tell me about himself he said three or four words of the beginning of a sentence but was unable to complete it, although he seemed to understand perfectly all that I said to him.

When I asked him to count, he only got as far as four at first, but after several tries he got up to the teens.

When I gave him a book he seemed able to understand it, and only made slight mistakes in reading aloud.

He wrote from dictation with little difficulty, but when he tried to tell me about himself in writing he could not find words and wrote, after a great deal of thought :—" I can not able to stand." He, therefore, showed ability to understand spoken and written language, but found it hard to express himself in either.

During the following night he got much worse, and the next morning I found him in a stupid somnolent condition.

The right arm and leg were almost completely paralysed and the right side of his face partially so. The left pupil was contracted and the left conjunctiva congested. The tongue, when put out, deviated to the right. Speech was attempted, but was unintelligible and his mental condition was poor.

The next day he was a little better and I found sensation diminished in the right arm and leg. The heart and kidneys showed no signs of disease.

Under large doses of potassium iodide and mercurialunctions he improved rapidly. In a week he was able to stand and to move his right arm. He was also able to speak, though his memory of both words and events was slow.

Two weeks later he could lift his right arm above his head, and could walk without support.

About the end of July he passed from under my observation for a time, but I saw him again in October and found that he had had no fresh attack. He was able to walk long distances, and had fairly good use of his arms, but he still found difficulty in doing his ordinary work, which was stone-cutting and required considerable dexterity. He said, he sometimes had attacks of dizziness, and in speaking could not always remember the words he wanted as well as before the attack.

As to diagnosis :—The association of aphasia with hemiplegia usually points to some lesion of the left middle cerebral artery. The absence of coma, the gradual onset, and the age of the patient render hæmorrhage unlikely, and indicate rather thrombus, embolus, or syphilitic disease. The rarity of simple thrombus, the absence of any obvious cause for embolus, the gradual onset, the rapid improvement during anti-syphilitic treatment, and the history of syphilis, render syphilitic disease the most likely cause of his symptoms.

I should like to point out here that aphasia occasionally seems to depend on purely functional changes, and, from the peculiar mode of onset in this case, such an idea might have occurred to one before the appearance of the hemiplegia.

That aphasia may be a functional affection is indicated by the fact that lunatics may act as if aphasic for years and suddenly resume the function of speech, and I will relate a case to you that I reported in the General Hospital, in which I believe epileptic fits took the form of temporary attacks of aphasia.

L. McL. was admitted to Dr. Stewart's wards in the General Hospital in November, 1891, complaining of cough, palpitation, and periodic seizures. He was a farmer, married, temperate, had had dysentery and influenza. Since the latter, two years before admission, he had not felt strong.

Family history of phthisis and paralysis. For a long time he was subject to severe headaches accompanied by nausea, but he had been free for several years. Eight months before admission he had a sudden attack of unconsciousness which lasted, he thinks, about an hour. On recovery his memory was a blank, but there was no paralysis. He had no further seizure for two months, but at the end of that time, while in the fields, he found himself suddenly unable to remember the words he wanted, and had to use other words and signs in their place. This condition passed off in a few minutes, but returned several times during the next three months in much the same way. Five months after the first attack he again had one in which he became unconscious. During the three months preceding admission he thought that he had not lost consciousness in any attack, but he had a great many in which he became aphasic. He had had as many as twelve in one day, and at other times had gone several weeks without. He had twice frothed at the mouth during his attacks; he had often had buzzing in his ears before them, and had occasionally had twitching in some of his limbs afterwards.

His condition on admission was as follows:—He was a man of large frame with a reddish complexion and moderate muscular development. He had a slight cough, and there were signs of incipient phthisis in his right lung and bacilli in his sputum. He suffered from diarrhoea and felt weak. He had lost some weight but did not look at all emaciated. Soon after admission he had one of his attacks, of which I give an account obtained partly from himself, partly from the nurse, and partly from personal observation:—The patient was talking to the man in the next bed when he felt a peculiar full feeling in his stomach. This travelled up his chest, around to the back of his head, and up over the vault to his forehead. When it reached his forehead he became unable to speak.

His neighbour heard him say, what sounded like two words indistinctly mumbled, and then he turned over on his side, made a grunting noise and beckoned to the nurse. He then went through the movements of writing on his hand. As he told me

afterwards, he wanted the nurse to bring him some paper, so that he could write and ask her to send for me.

I was sent for and came at once. I found him sitting up in bed with a troubled expression. He was unable to speak, but answered questions by nods and appeared to understand what was said to him. I gave him a piece of paper and asked him to write his name. He wrote instead the sign Dr., which, you remember, he had in mind to write as the fit was coming on, to cause the nurse to send for me. He seemed to know he was wrong and tried again with no better success. He was unable to pick out his own name when I wrote it among several others. A minute or two later he spoke and said:—"I am getting all right now." His faculty of speech had been in abeyance for about fifteen minutes, as nearly as I could calculate, and had only partly returned. I asked him now the name of his attending physician and he could not tell, but was able to read it aloud off the admission card.

He was unable to tell the name of the town near his home, and when asked to write it instead of Sherbrooke wrote Sheresherse. He had some difficulty in getting his words for some half hour or more after I arrived. He said he knew the words he wanted but could not say them, and he told me he had a paralyzed feeling at the root of the tongue.

He did not sleep for four hours after, and this brought him to about his usual time for going to sleep. He told me the next day that he had a peculiar dreamy feeling during the onset of the attack, in which he seemed to be saying, "Strange, strange, strange," to himself and felt himself floating off through the air.

He had one more attack during his stay in hospital, which I did not see, and he went home early in December.

In favor of these attacks being epileptic we have the following facts:—The presence of aura; the occurrence of as many as twelve within twenty-four hours, succeeded by periods of freedom from them—the old history of sick headache and the absence of coma or paralysis. The account he gives of having been unconscious for an hour at the first attack does not ex-

clude epilepsy, even if accepted, for it is known that epileptic fits may almost exactly resemble apoplexy, especially the first ones. Thus Fagge, in his "Practice of Medicine," quotes from Trousseau an account of two epileptics, in whom the first attacks resembled apoplexy very closely, but were followed by ordinary epileptic fits.

A few days after I saw this man, in what I consider his epileptic fit, the patient in the next bed afforded me the opportunity of seeing an apoplectic one, which was very interesting to compare with it.

J. S. was admitted to the General Hospital in November, 1891, complaining of weakness in the right arm and leg, of dizziness, and of vomiting in the morning.

He was married, aged 37, teamster, moderate drinker. No history of syphilis.

Family history negative as regards nervous or vascular disease. Two years before admission after going to bed apparently in his usual health, he passed from sleep into a state of unconsciousness, which lasted 48 hours. While in this condition he had a number of convulsions and vomited several times. For a few days after he came to himself his mind was confused, but there was no paralysis and he was all right in about a week. After this attack he remained well for nearly two years; but two months and a half before admission he had a second fit, which did not affect his mind so much or last so long as the first, but which left his right arm weak.

He had a third attack about two weeks before admission which further weakened his arm and right leg.

During the two weeks between this third attack and his admission to hospital he vomited several times. On admission he was seen to be a tall spare man. Digestion good. Lungs normal. Pulse 72, high tension. Heart slightly hypertrophied. Urine of high sp. gr. 1032, acid, no albumen or sugar. His right arm and leg were decidedly weaker than the left.

In both, the parts nearest the body were the weakest in proportion.

Measurements showed the right arm and leg to be slightly

smaller in circumference than the left. Sensation normal. Both knee-jerks exaggerated. The patient said he had a full feeling in his head about every second day, which was sometimes relieved by vomiting, and he felt best when his bowels were a little loose.

On December 7th he had one of his attacks.

For 24 hours before the attack he felt his right hand getting numb, and as the fit was coming on this numbness increased. Then he felt chilly and his head began to feel big and he called "nurse, nurse," as he was going into the fit.

I arrived soon after it started and found him lying down with his head bent back. There were clonic spasms of the eyelids, lower jaw and both hands. Pupils widely dilated. After, perhaps, a couple of minutes the spasms stopped, the pupils contracted to normal, and he spoke or rather mumbled something indistinctly.

He seemed to know the words but formed them imperfectly.

When asked to put out his tongue he projected it far to the right.

His right arm was hanging limp and powerless and there was no power of voluntary motion in the shoulder, elbow, wrist or fingers. The biceps could be felt contracted and resisted extension.

His left arm was not paralysed, but was the seat of a fine tremor. Sensation was considerably diminished in the right arm to touch, pain and temperature. After about an hour the power began to come back to the right arm, and one of the first muscles to improve was the biceps. During the attack I spent most of the time watching his arm and face, but after it was over I found the right leg weaker than it was before.

This attack was not followed by drowsiness nor even by headache.

In a week his condition had returned to about what it was on admission, and he went out without having any more attacks. I heard from him quite recently and, during the two years which have elapsed since he left the hospital, he has had several of these fits. He says that one left him so badly paralyzed

that he was unable to get about for six months. At the date of writing to me he was better and able to drive his team. Taking into account the paralysis, the 48 hours of unconsciousness at the first attack, the recurrence, and his high arterial tension, we are almost driven to a diagnosis of cerebral hæmorrhage; but from the attack which I saw alone, I should have found a diagnosis difficult.

A slight degree of paresis following a fit does not exclude epilepsy as it is sometimes seen in this disease.

In this case, however, I think the history makes the nature of the case pretty clear.

A fact which sometimes makes a diagnosis between apoplexy and epilepsy difficult is, that hæmorrhage or some other lesion of the brain may be the starting point of epilepsy.

I was consulted a short time ago about a woman who had some half dozen fits of a fairly typical epileptic character after a fall on the head. The fall stunned her, and caused considerable effusion of blood into the loose tissue about the eyes.

A couple of weeks after the fall, there was a sudden gush of dark fetid blood from the nose, which at the time of the accident must have been poured out into some part of the nasal passages. For two or three weeks she had almost constant headache and was very drowsy and weak. The left external rectus muscle was paralyzed.

Altogether she had 6 or 8 fits in which she had clonic spasms and bit her tongue badly. With rest in bed and a simple tonic she got better and the fits stopped. As she never had any fits before her injury, they must have been caused in some way by it.

Considering the severity of the fall, the continuous headache, the drowsiness, and the paralysis of the external rectus, it seems likely that the brain itself was injured. Perhaps there was intracranial hæmorrhage, perhaps even fracture of some of the bones at the base.

If, as the cases related seem to indicate, an injury to the brain may cause epileptiform fits, and if epilepsy may come in the guise of aphasia, which is so often a feature of organic

disease, we must naturally expect to meet many cases in this department of medicine taxing to the utmost our diagnostic skill.

In February last I had a case which I found considerable difficulty in classifying. A boy of about 13 years of age fell on his head and partially stunned himself. He was able to get up in a minute or two and was apparently all right, except for a headache and a slight feeling of nausea which persisted for some days. At the end of two weeks, just after leaving the closet, he felt his right leg become suddenly weak, causing him to stagger and seek support. His mother, who was present, says his face twitched. When I arrived, some half an hour later, he was lying down with a drowsy appearance; lids drooping; pupils large; mind wandering; answers monosyllabic and silly. There was paresis of the right side of the face and also some weakness of the right arm and leg. I got him to pass some urine which, on examination, presented some interesting features.

Although it was less than an hour since he had left the closet and presumably emptied his bladder, there was about 8 oz. of it. It was pale like water and the sp. gr. only $1003\frac{1}{2}$. No albumen or sugar.

This condition of the urine made me think at first of a lesion of the medulla; but as the face and limbs were paretic on the same side, whatever lesion there was must have been above the medulla before the facial nerve crossed.

From the mental disturbance it seemed likely that the seat of the lesion was cortical. As to whether there was a small hæmorrhage, caused by the straining at stool, being too much for some vessel which had been wounded when he fell, or whether the attack was simply a remote functional effect of the concussion he received two weeks before I do not know. At any rate the symptoms rapidly improved, and at the end of a week it was hard to find anything wrong, except a slight asymmetry of the face when he laughed.

Three days after I was first called in, when his mental condition was sound, I tested sensation and found it diminished in the right arm, especially to temperature.

In two other cases which I have reported above, I noted more or less anaesthesia accompanying motor symptoms referable in at least one case to the cortex. Until recently we believed that ordinary sensation had its centre in certain convolutions on the inner surface of the brain, but within the past few months the *British Medical Journal* alone has published evidence which goes very far to prove that the outer surface of the brain about the fissure of Rolando, the so-called motor area, has sensory functions as well.

In September a paper was published by Dr. F. W. Mott, of London, in which he affirmed that after removing part of the motor area in monkeys he had found sensation diminished.

He also stated that Mr. Horsley has seen undoubted sensory defects follow the removal of large portions of the Rolandic area in man.

In the same number was a paper by Dr. F. Stacey Wilson, of Birmingham, who, reasoning from clinical experience, brought forward similar views. He related eight cases, in which paralysis, which seemed to be of cortical origin, was accompanied by anaesthesia.

One very important fact he pointed out was, that anaesthesia is more often found with paralysis of the face and arm than with that of the leg or trunk. But the latter, from the more central position of their centres, would be more frequently involved in lesions of the gyrus fornicatus or hippocampal gyrus which were formerly regarded as the sensory centres.

In the *British Medical Journal* for November 4th, some remarks were published by Dr. C. S. Sherrington on a case of focal epilepsy where the lesion was found to be an old hæmorrhage in the leg area. He drew attention to the fact that the patient had aura referable to certain sensory nerves which were represented in the same lumbar segment as the muscles where the fits started. He also stated that a fit had been produced by irritating the sensory area to which the aura was referred. Does not this case suggest some connection between the motor leg centre and these sensory nerves ?

I will close this paper by recapitulating the principal propositions, which the cases I have related, seem to suggest for discussion.

Aphasia may be the most prominent symptom, for a time at least, of either functional or organic affections of the brain.

Epilepsy may closely resemble cerebral hæmorrhage, and the latter or kindred lesions may closely resemble or may even cause epilepsy.

The so-called motor area has sensory functions as well, and would be better called by some other name.

ONE HUNDRED CASES IN THE CORONER'S
COURT OF MONTREAL, 1893.

BY WYATT JOHNSTON M.D., MONTREAL.

(Concluded.)

IV.—DEATH FROM NATURAL CAUSES (20 CASES).

Under natural causes I have included those cases only where a known natural cause could be fairly considered as proved. Those cases where indefinite verdicts of "natural causes" were rendered, have been classed as deaths from unknown causes.

Our great source of inaccuracy in coroner work is the readiness with which probable (and even, improbable) medical explanations of the death are made the basis of verdicts. The phrase "I don't know" is not perhaps as frequently made use of in medical evidence as it might be.

The family physician is placed in a very delicate position when summoned as a witness. He is often examined in the presence of the persons who are his patients, before a jury some of whom may be his patients and he may have already made some informal statement as to the cause of death. He may too, through his attendance on the deceased be in possession of secrets which he hesitates to reveal, 'sine gravi causa,' to a prying and inquisitive jury. Among his patients, the family physician is very properly regarded as an oracle. Personally, when in most of us infinitely prefer that our medical attendant shall not inflict upon us his doubts and difficulties in our own cases. On the other hand, in legal matters, the oracular functions of the physician remain in abeyance, and it becomes simply a question of what is or is not proved by facts.

An expert is placed in a rather more favorable position than an ordinary medical witness as there are no extraneous reasons why he must appear to know more than the facts clearly establish, and he may without loss of dignity adopt the agnostic as opposed to the oracular stand-point in giving medical evidence. As the information acquired by the expert is not obtained in confidence from a patient, he is more free to divulge it if necessary, and the employment of experts in

medico-legal matters is the means in France of securing inviolable secrecy of practicing physicians.

Deaths from natural causes are as a rule harder to interpret than those from violence, and of all natural deaths those which occur suddenly are usually the most difficult to explain. Often even a post-mortem does not fully clear up the matter, since the detection of structural lesions, except when these from their nature are obviously incompatible with the continuance of life, does not fully explain why the vital function was arrested at a given moment.

Vibert, (*Précis de Médecine Légale*) has made an excellent classification of sudden deaths into the following four groups:—

I. The lesions are such that there can be no doubt that death was due to a natural cause, as, for instance, in cerebral hæmorrhage, rupture of aortic aneurysms, etc. In these the true cause of death is *demonstrated*.

II. The lesion found is such as is capable of producing sudden death but does not exclude the possibility to some other cause having intervened. Thus, although there is organic disease of the heart or kidneys it may be possible that death is really due to some other cause. These lesions may therefore be said to *suggest* rather than to demonstrate the cause of death.

III. The lesions found suffice to indicate a fatal disturbance of vital function but are of a general nature and common to several diverse causes. Thus fatal congestion of the lungs, or of the brain, is compatible with suffocation, alcoholism, narcotic poisoning and many other conditions. Here medical inquiry into the circumstances of the death with reference to the possible causes may make the proof fairly complete.

IV. Neither in the anatomical nor chemical examination of the body, nor in the circumstances of the death is there any explanation of the death. These unexplained cases of death are however rare.

Unexpected deaths occur most commonly among (1) drunkards, (2) old persons and (3) young children.

It must be remembered that because the body is found the death has not necessarily being sudden.

The following are the details of the deaths from natural causes met with in this series:—

Death was sudden in 13 cases. In 13 cases there had been no medical attendance. In 8 cases the bodies were found dead. Autopsies were held in 15 cases.

The causes of death were as follows:

Pneumonia, 6; pulmonary embolism, 1; phthisis 2; heart disease, 3; interstitial nephritis, 1; cerebral hæmorrhage, 4; cerebral abscess, 1; still born, 2.

PNEUMONIA (6 CASES.)

In a number of cases sudden death is due to some serious acute or chronic disease, which has produced few or no symptoms. It has long been known that ambulatory cases of typhoid very often terminate suddenly. One of my recent cases (not included in this series) was of this nature, and the autopsy at once revealed the true cause of what was thought to be a case of poisoning. That a latent pneumonia is often the cause of unexpected deaths is well known in hospital practice, but the medico-legal bearing of this fact does not seem to have been recognized, the large proportion of pneumonia among my cases is of special interest. The disadvantage of the practice of carrying on elaborate circumstantial inquiries instead of making an autopsy at once was well illustrated by the following case of death from pneumonia under alleged suspicious circumstances.

CASE 2.—*Pneumonia—Suspicion of violence and Starvation.*—H. S., aged 70, an old man of intemperate habits was found dead in bed. The body was seen by a doctor who reported to the presence of bruises on the back (which proved to be only post-mortem lividity,) and suspected a violent death. Another theory was that the old man had been starved to death. The jury met and adjourned several times and listened with much attention to a great deal of circumstantial evidence. Finally they decided to authorize an autopsy of which the following is a condensed report:—

Moderate lividity posteriorly. No marks of violence. Right pleura shows trace of recent lymph in axillary region. Heart, right chambers moderately distended contain long stringy pale clots which extend into the branches of the vena cava and pulmonary arteries. Right lung weighs 1920 grammes. The whole of upper lobe except anterior border completely solid and airless. On section, cut surface coarsely granular and gray, bathed with grayish yellow fluid containing small fibrinous particles. The rest of lung intensely engorged but crepitant. Left lung weighs 550 gms., slightly hyperemic throughout. Kidneys of

natural size, show a few cysts on surface, capsules adherent. Stomach contains food. Intestinal contents of ordinary amount and appearance. Brain, subarachnoid fluid abundant, otherwise normal. Other regions show no evidences of disease. The body throughout shows fatty tissue in normal amount.

Conclusions.—1. Death has been caused by pneumonia. 2. There is no proof of starvation or of violence.

Singularly enough in view of this medical statement the jury returned a verdict that the deceased died of consumption, and that nobody was to blame.

CASE 4.—Pneumonia—Suspected Poisoning.—J. M., a woman aged fifty, of intemperate habits, found dead in bed. For some reason suspicions arose that she had been poisoned.

Autopsy.—Jan. 25th, 1893. Body slightly jaundiced. No external signs of violence. Liver extends down to level of umbilicus. Heart muscle brown, valves normal. Right lung emphysematous anteriorly, an area of consolidation found posteriorly, partly in the upper and partly in the adjacent portion of the lower lobe. On section this is found to be grayish in colour, and granular; the surface bathed with a turbid grayish fluid, rest of lung moderately congested throughout but crepitant.

Kidneys small and slightly fibröid. Spleen normal. Intestines normal. Stomach contains a little curdled milk. Liver large, friable, pale and greasy, of orange colour, evidently in advanced stage of fatty degeneration and jaundiced.

Conclusions.—There are evidences of a severe acute pneumonia which has lasted several days and is sufficient to explain the death. There is nothing to indicate poisoning.

CASE 86.—E. P. æt. 40. A dissolute and drunken woman, arrested for making a disturbance and found dead in the police cell.

Autopsy, on Aug. 1st, 1893. Body of a very stout short woman, no signs of injury. Brain—moderate œdema beneath pia; brain substance feels very firm and dense. Lungs voluminous. Soft yellow lymph over the posterior part of right upper lobe. The greater part of this lobe is consolidated and, on section, granular and greyish red in colour. Portions excised sink in water. The rest of lung engorged with blood. Bronchi contain much muco-pus. Left lung intensely congested but crepitant throughout.

Liver large and slightly fatty.

Kidneys large, antero-posterior diameter greatly increased. Capsules thickened and adherent. Cortex, swollen and coarse looking, of an opaque grayish colour. Nothing of note in the other organs.

Conclusions.—Death has been due to acute pneumonia. The organs show the effects of usual changes found in chronic alcoholism.

CASE 43.—M. R. æt. 64. Said to be in the habit of getting on occasional sprees, in the intervals worked steadily. Died at the end of a few days illness. His wife was supposed by neighbours to have poisoned or starved him.

Verdict.—“*Death from Alcoholism,*” (he having been known to drink a moderate quantity of whisky during his last illness.)

Private Autopsy.—May 30th, 1893.—Mesenteric glands swollen and succulent. Congestion of serosa of stomach.

In right pleura recent soft adhesions in axillary region, with about 6 oz. of turbid fluid. Right lung weighs 3 lbs. On section almost the whole of the upper and middle lobes and the greater part of the lower lobes solid and airless. Cut surface granular and grayish. On scraping cut surface, a turbid bloody fluid obtained containing minute fibrinous particles. Bronchi reddened and contain a little mucus. Left lung intensely congested and oedematous; near the base a few scattered granular areas of consolidation ranging in size from a cherry to a walnut.

Heart moderately distended, valves normal. Spleen normal. Kidneys slightly granular. Stomach, mucosa thickened and red, covered with grayish mucus; mucosa of colon and lower ileum reddened and swollen. Liver large and pale, cut surface greasy, periphery of lobules whitish. Gall-bladder shows a small patch of croupous exudation in the upper surface 1 inch in diameter.

In this case although the condition of the stomach suggested the effects of alcoholism, the presence of a severe enteritis and croupous cholecystitis could not be explained in that way.

Burial in consecrated ground which had been refused on account of the verdict of the jury, was now sanctioned.

CASE 3.—*Pneumonia, alleged death from neglect.*—E. M., aged 3½ years, stated to have died on account of neglect by her parents.

Autopsy, Jan. 23rd, 1893. Body of a female child 3 ft., in height. Skin is loose and wrinkled. Marked genu valgum. Shape of chest not rachitic. No marks of violence. Subcutaneous fat in moderate amount, but is firm, dry, grayish in color and feels lumpy. Heart normal.

Left lung crepitant throughout, somewhat congested, a good deal of muco-pus in the smaller bronchi. Right lung shows an area of consolidation the size of an apple centrally situated in the anterior half of the middle lobe; on section this is grayish and granular and yields a turbid juice on scraping. Several smaller granular looking areas of consolidation seen in adjacent portions of the upper and lower lobes. The adjacent pleura covered with yellow sticky lymph. On squeezing the lung abundant thick yellow muco-pus comes from the smaller bronchi.

Stomach rather small but not definitely contracted. Mesenteric fat in moderate amount. Intestines normal but nearly empty. Other organs normal.

Conclusions.—Death has been due to broncho-pneumonia. There are evidences that the child has apparently eaten very little latterly.

Verdict.—*Neglect by parents not criminal in degree.*

CASE 31.—K. E, female aged 1 year. Died unexpectedly in an immigrant train between Montreal and Quebec.

External Examination, May 29th, 1893. No marks of violence. Nothing externally to indicate the cause of death.

Upon questioning the parents, they stated that the child had had a cough during the voyage out and on landing at Quebec had been

exposed to severe cold. Did not appear to be very ill, but was suddenly seized with convulsions.

Conclusions.—The history obtained points to death from bronchopneumonia. There is nothing specially suspicious in the rapidity of the death.

This shows the difficulty of arriving at any result by external examination without being able to make inquiry into medical points; naturally an autopsy would have been more satisfactory but none was allowed.

PHTHISIS.

CASE 30.—A. B., aged 30, known to be in the last stages of consumption, died on the train between Boston and Montreal; an inquest was held:

External Examination, July 19th, 1893. Body much emaciated; cedema about right ankle and the whole of left leg. Finger ends clubbed and nails incurvated. Hollowing under clavicles and dulness in R. infra-clavicular region. No marks of violence.

Conclusions.—The body is that of a person in the advanced stage of a chronic wasting disease,—apparently consumption.

CASE 26.—*Phthisis—Hemoptysis from aneurysm of pulmonary artery.*—Unknown man (subsequently identified) found dying in the street with severe hæmorrhage from mouth and nose.

Autopsy.—April 29th, 1893. Body of a small, emaciated man about 40 years old. Recent blood stains about coat and shirt. Mouth filled with clotted blood. No marks of violence.

In thorax lungs project and appear inflated to an extreme degree. Numerous small areas of hæmorrhage into the lung tissue near the anterior margins (pulmonary apoplexy). Bronchi and trachea full of fluid blood and soft clot.

An old cicatrix at the right apex; at apex of left lung a cavity the size of an apple, with thick firm grayish walls, which are for the most part smooth but in places covered with a thick layer of shreddy loosely attached decolorized fibrin apparently the residue of former hæmorrhages. Projecting from the wall of the cavity is a small sessile aneurysmal projection as large as a cherry stone springing from a branch of the pulmonary artery the size of a goose quill. The walls of the aneurysm are very thin and flexible and a small laceration 2 mm., long is seen along its most prominent part.

An old cicatrix seen in the region of the cricoid cartilage, extending across the neck.

CASE 23.—*Sudden Death from Pulmonary Embolism following Parturition.*—L. M., aged 17. Primipara. Was suddenly seized with convulsions and died almost instantly 8 days after the birth of an illegitimate child.

Autopsy, Feb. 23, 1893. Body well nourished. Breasts tumified and contained milk. A large laceration in perineum reaching nearly to anus. Surface granulating. Diaphragm at 3rd rib on right side and 3rd space on left. 100 cc. of clear fluid in each pleura. Heart, right chambers contain 200 cc. of fluid blood and clot, the latter not very adherent. Heart muscle flabby and gray-looking. Valves normal. No ecchymoses.

Lungs crepitant. Bronchi contain thick mucus. On slitting up pulmonary arteries, the middle sized branches found to be stuffed with lumpy gray rounded fibrinous masses. A large smooth rounded clot lies just beyond bifurcation. None of the masses adherent. Right lung in same condition, the obstructions being chiefly in the larger branches of the pulmonary artery. Spleen large and soft, 250 g. Kidneys together weigh 450 grammes. Uterus projects above brim of pelvis. Length 12 cm., from fundus to internal os. Placental site anterior, covered by a thick grayish diphtheritic looking membrane. Slight fetor. A few old erosions about cervix. Left ovary contains a corpus luteum 8 mm. in diameter. Pelvic and uterine veins free from thrombosis, as are also the iliac and femoral veins. In right saphena vein a soft grayish red adherent thrombus. Brain normal. Other organs normal.

A point of interest in this case was the source of the embolus in the saphena vein and not in the pelvic veins.

HEART DISEASE (3 CASES).

CASE 79.—J. at. 50, and dropped dead while sitting at work on an office stool. Said to have fallen with his face against a sharp piece of wood. Had been under treatment for the past 2 years for eczema by a physician of excellent standing who stated that he was ready to certify death as being due to heart disease, as he knew him to be suffering from aortic regurgitation. Recently the deceased had suffered from shortness of breath and precordial oppression. Inquest held July 18th, 1893.

External Examination.—An irregular laceration 1 inch long and 1 inch deep beneath left malar process. No oedema. Precordial dulness not increased.

Conclusions.—The external examination does not show the cause of death.

CASE 38.—S. D., aged 51. Had suffered from acute rheumatism when a young man. Lately very short of breath, obliged to sit up at night owing to a feeling of suffocation. Had a cough. The day previous to death dyspnoea was very severe. Died during the early morning.

External Examination.—Finger ends clubbed, and nails incurvated. (Edema of both feet and ankles, none of face.

Conclusions.—The body shows marked evidences of chronic interference with the circulation, probably from heart disease.

In this case the external evidence of serious organic disease present, combined with the history, left little doubt as to the cause of death.

CASE 77.—Mrs. G., aged 40. Found dead in bed. Had been in poor health for some time and was short of breath. Habits intemperate (?)

Autopsy.—July 15th, 1893. No signs of injury. Subcutaneous fat abundant. Heart larger than normal, chambers distended with blood. Left ventricle shows an extreme degree of hypertrophy and dilatation. Aortic and mitral valves show extensive fibroid changes. The middle and right aortic segments are fixed and perfectly rigid, being evidently incompetent. On the ventricular surface of the mitral valve just

beneath the aortic cusp is a projecting calcareous mass. Orifices of normal size. Heart muscle is of good colour, and shows no appearance of degeneration to the naked eye.

Lungs crepitant, moderately filled with blood. Pulmonary vessels free from obstruction. Kidneys considerably reduced in size. Capsules thickened and surfaces granular. Renal arteries very thick, with rigid, stiff walls. Mucosa of stomach thick and grayish red in color, its vessels intensely injected. Intestines, spleen, larynx and pharynx and brain normal.

Conclusions.—There is evidence of severe organic disease of the heart and kidneys, of a kind which frequently leads to sudden death. The naked eye appearance of the organs do not explain why the functions of the heart failed but there is nothing in the present case, except the condition of the heart and kidneys to account for the death and nothing to indicate that death is not due to this cause.

The verdict in this case was "death from paralysis of the heart," owing to my having unguardedly mentioned that this was the explanation usually given to the train of symptoms which precedes death in those cases.

Subsequently, I made a microscopic examination of the heart muscle and found the condition of segmentation of the muscle fibres, known under the name of *myocardite segmentaire* which has been supposed to explain on objective grounds the failure of heart function in cases of sudden death, when the muscle appears perfectly normal to the naked eye. Though possibly only an agonal change it offered some further grounds for attributing death to the diseased heart in this case.

GRANULAR KIDNEYS.

CASE 72.—*Renal Cirrhosis—Uremia (?) Ulceration of Colon—Multiple Sarcoma*—M. K., an elderly woman of intemperate habits. Refused hospital treatment and died in a state of great squalor. Inquest held.

Autopsy, Aug., 8th, 1893.—Considerable emaciation. Skin rough and sallow. Surface anæmic. Marked urinous odor of body. No marks of violence.

Heart: right chambers distended with very pale, gelatinous clot which is partly colourless or in places very pale translucent red and evidently formed from extremely anæmic blood. Wall of left ventricle over $\frac{3}{4}$ inch thick. Muscle brownish, does not look fatty. Valves normal.

Lungs emphysematous, crepitant throughout. Organs of neck normal. Spleen normal. Liver small and brown.

Kidneys greatly reduced in size, weighing both together only 60 grammes or about one fifth of the normal weight. Capsules adherent and thickened. Surface rough and granular, on section cortex seen to be greatly reduced and the organs cut with greatly increased resistance.

Small intestine intensely congested throughout. Throughout large bowel, from the cæcum to the anus are found extensive ulcerated patches, the bases of which are covered with exuberant fungating granulations, having the appearance of new growth.

In the skull cap, numerous nodules of soft grayish tissue are scattered through the diploe and encroach upon the inner table which is in places completely absorbed. The masses range in size from a pea to a cherry and are evidently secondary deposits of a malignant growth. Brain normal.

Conclusions.—Death has probably been due to uræmia from cirrhosis of the kidney. The deceased was also the subject of cancer. The diseases present would ultimately have been fatal in spite of any medical treatment.

Microscopic examination showed the growths in the skull-cap to be lymphosarcoma. Microscopic sections of the ulcers in the intestino showed no evidence of new growth. The diagnosis of uræmia as the immediate cause of death appeared justified from the fact of coma and convulsions having preceded death. The anæmia was probably due to the cancerous disease of the bone marrow.

CEREBRAL HÆMORRHAGE (5 CASES).

CASE 37.—*Cerebral Hemorrhage—Congenital Cystic Kidney.*—A. L., aged 51. Became suddenly unconscious and died in a few hours on May 23rd, 1893.

Autopsy.—Both kidneys enormously enlarged, weighing 800 and 900 grammes each. They are transformed into a series of cysts set so closely together that no renal tissue can be seen with the naked eye. Ureters and bladder normal. Throughout the liver numerous small cysts ranging from pin head to peas in size and filled with clear fluid. Microscopically these are seen to be dilatations of the minute bile ducts.

On removing brain an extensive recent hæmorrhage is seen originating in the region of the left external capsule. The lateral ventricles are full of blood. The vessels at the base are not atheromatous. The smaller vessels examined microscopically are found to be fatty.

In this case the disease of the kidneys was so striking that this might have been thought to explain the death, had the brain not been examined. There was no history of any renal symptoms. The coincidence of cystic kidney with cysts in the liver is stated to be the rule.

CASE 66.—*Rupture of Cerebellar Artery.*—J. C., aged 50, a saloon-keeper, dropped suddenly dead. Was a heavy eater and drank a good deal.

Autopsy.—June 28th, 1893. Heart greatly hypertrophied. Kidneys large, dark, hog-back in shape and cut with resistance.

Brain, extensive sub-arachnoid hæmorrhage about base, most abundant posteriorly, and evidently compressing the 4th ventricle. Vessels

at base thick and rigid. On the right anterior inferior cerebellar artery is an atheromatous patch, at which the vessel presents a lacerated spot of rupture.

CASE 73.—*Cerebral Aneurysm*.—J. C., aged 45. Died suddenly in a brothel where she was an inmate.

Autopsy.—July 11th, 1893. On removing brain the entire base covered with a subarachnoid hæmorrhage extending along the sylvian fissures and over the inferior surface of the cerebellum. The 4th ventricle filled with dark clot moulded to the shape of the ventricle. Lateral ventricles free from clot. A yellow-brown area of softening 1 inch in diameter in the left external capsule near the head of the optic thalamus. The cerebral arteries thick and atheromatous with gritty calcified plates. On the inferior surface of the anterior communicating artery is a sacculated aneurysm the size of a large pea in which a laceration is seen. On the inferior surface of the right temporal lobe is a recent reddish spot of softening in the centre of which is a thrombus occluding a spot of laceration in the wall of a small artery. Heart large. Left ventricle thick. Kidneys below normal size, surfaces granular and cortex greatly reduced. Liver of average size, friable, and pale yellow; in advanced state of fatty degeneration and show calcareous changes. Both ovaries are surrounded by dense adhesions.

In this case it was of interest to note the existence of two hæmorrhages which must have occurred a week or so before the fatal hæmorrhage, without the acquaintances of the deceased having noticed any symptoms.

CASE 74.—*Rupture of Sylvian Artery*.—N. P., aged 50. Died suddenly.

Autopsy.—July 11th, 1893. A fine woolly looking white froth about nostrils. Over sternum is a mustard plaster, beneath which no sign of redness or vesication is seen. Lungs voluminous. Sub-pleural ecchymoses. Heart large, weighs 550 grammes. Left ventricle dilated and its wall hypertrophied. Below the cusps of the aortic valves is a rough calcareous yellow projecting mass, which almost occludes the orifice. On ventricular surface of mitral a few small recent fibrinous vegetations. Lungs œdematous, cut surface rusty looking. Bronchi full of froth. Near lower extremity of spleen a partly decolourized hæmorrhagic infarct the size of an egg.

Brain. On removal, an extensive dark firm clot covers the entire base. A little clot in 4th ventricle. The source of the hæmorrhage is seen to be a rupture of the right sylvian artery at a point where the vessel is extremely atheromatous.

Thus, in three out of the four cases, the source of the hæmorrhage was readily discovered, which is always a source of satisfaction in giving evidence. The verdicts in all the cases was of course apoplexy.

In some cases when the vessels are atheromatous it often is a point of extreme difficulty to determine whether a fatal

hæmorrhage has been due or not to some intervening act of violence involving a slight blow or a fall. This complication did not arise in my cases.

ABSCESS OF BRAIN FROM MIDDLE EAR DISEASE.

CASE 63.—M. C., aged 9 months, an illegitimate female child. Had suffered from double middle disease in the foundling asylum, was afterwards removed by her mother and brought back in a dying condition. No satisfactory explanation obtained.

Autopsy, June 27th, 1893. Body well nourished. No signs of external injury. No discharge from ears.

On sawing through skull cap and brain at the level of corpus colosum, an abscess as large as a hen's egg, filled with greenish yellow pus, is situated in the right hemisphere, lying behind the fissure of Rolando, and has burst into the right lateral ventricle near the descending horn. The cortex external to the abscess is no thicker than a sheet of blotting paper. The abscess wall is formed of thick reddish gray pyogenic membrane. A little pus is found in the left lateral, as well as the 3rd and 4th ventricles. About the optic chiasm and sylvian fissures and over the cerebellum abundant creamy pus lies beneath the arachnoid. Hæmorrhagic infiltration of cortex in right temporal lobe. The internal ear, and on both sides, shows abundant reddish gray granulations, in which the ossicles are imbedded. Both drums are perforated. Mastoid antrum contains a little mucoid fluid. The right mastoid cells are soft and appear carious. Sinuses at base of skull normal. All other organs look healthy.

STILL BIRTHS (2 CASES.)

CASE 14.—*Cerebral Hæmorrhage in a new-born infant.*

Autopsy.—On an unknown male infant found at Côte St. Paul, on Feb. 24th, 1893. Body frozen, Length 18 inches. Weight 5 lbs. 2 oz. Cord ligatured with white cotton thread. Head obliquely flattened on the right side. A little vernix about armpits and groins. Meconium about anus. Scrotum large and œdematous. Testes descended. No signs of injury to scalp. Large, caput succedaneum in left temporal region. Bones of skull not broken.

At the base of the brain is a blood clot the size of a pigeon's egg, lying near the medulla. A little hæmorrhage about sylvian fissures.

Lungs dark red, contain no air, portions excised sink.

Stomach empty. Meconium in large and smaller bowels.

Epiphysis of femur shows a reddish vascular area, but no definite ossification. Hands and nails well formed.

Conclusions.—The child is not quite at term but is viable. There is no proof that it has breathed. Death has been due to cerebral hæmorrhage, there is no proof that this has not occurred during labour.

In this case I was obliged to examine the brain while it was still frozen, contrary to the usual directions laid down. I found the examination could be made very well in the frozen

state whereas as soon as thawing set in the brain substance melted into a grayish fluid. It has occurred to me that the examination of brain lesions when there is reason to expect softening from decomposition, might be better made if the head were frozen and frozen sections made.*

CASE 52.—*Still birth. Syphilitic pneumonia and fatty degeneration of heart.—Maceration.*—Supposed case of abortion and infanticide. *Autopsy*, June 8th, 1893. Immature male fetus. 12 inches long. No marks of violence. Epidermis somewhat softened. Body appeared free from decomposition. Umbilical cord $2\frac{1}{2}$ inches long, thick and gelatinous looking, well secured by cotton thread. Finger nails extend half way to tips. Toe nails not visible. Head measures $3\frac{1}{2} \times 2\frac{1}{2}$ inches. Nostrils contain yellow mucus, mouth free. Stomach and small intestine collapsed. Meconium chiefly in sigmoid flexure. Heart muscle pale grayish-yellow, and looks opaque. Microscopically the fibres are filled with coarse granules blackened by osmic acid and soluble in chloroform. Valves normal, fetal orifices open. Lungs, pale grayish white, feel solid and heavy, sinking in water. On section are dry and granular, alveoli are seen under microscope to be distended in places by small cell exudation (white hepatization). A little grayish mucus in stomach.

Brain, sylvian fissure seen as a broad groove. No other fissures visible.

A centre of ossification in calcaneum: bone in osiragulus or sternum. Placenta not obtained.

Conclusions.—The body has not reached the sixth month. Death has been due to foetal pneumonia with degeneration of the heart muscle, both probably syphilitic.

DEATH FROM UNKNOWN CAUSES (10 CASES).

CASE 101.—*Capillary Thrombosis of Brain.—Punctiform Hemorrhages.*—J. S., aged 30. Out of sorts for some days but able to work. While at work was taken with vomiting and convulsions. Soon became comatose, and died within 36 hours. Urine was albuminous, passed in fair amount.

Autopsy, Aug. 21st, 1893. Body poorly nourished. No external marks of violence. Thoracic and abdominal organs apparently healthy. Microscopic examination of kidneys shows no evidences of disease.

Brain, on dissection shows, in the region of the basal ganglia and the internal capsule numerous (12) areas of punctiform hemorrhage, giving the appearance, on section, of angiomata, the areas ranging from $\frac{1}{2}$ to 1 inch in diameter. The main vessels of the brain look healthy and the organ appears otherwise normal. Microscopical examination of the hemorrhagic areas shows the minute arterioles filled with hyaline thrombi and surrounded by extravasated blood, in which the corpuscles appear normal.

On being asked for my opinion I could only state that there

* Dr. Cattell, of Philadelphia (*University Med. Magazine*), has also recently called attention to the advisability of freezing the brain under these circumstances.

was extensive obstruction of the minute vessels of the brain with no evidence that this condition was due to violence, but that this did not satisfactorily explain the death.

A verdict of death from natural causes was returned. The case was a very puzzling one and a chemical analysis might have been interesting, but it was not demanded as there were no really suspicious circumstances, though the possibility of a toxic origin strongly suggested itself. The capillary hæmorrhages may have been the result and not the cause of the convulsions. The condition of capillary thrombosis seems analagous to that described as occurring in severe burns.

In the following two cases the deaths occurred suddenly in epileptics.

CASE 54.—F. S., aged 28, male. Found dead in bed. Had been treated at Montreal General Hospital for epilepsy. Recently, attacks had not been frequent.

External Examination, June 11th, 1893. Body of a well built muscular young man. Lividity marked in anterior parts of body, a few small irbiecs over chest and abdomen. Abundant bloody froth about nostrils.

Conclusions.—The cause of death cannot be stated from external examination.

Verdict.—*Death from unknown causes*.

CASE 44.—J. C., aged 75. An old man subject to epileptic fits in which he lost consciousness, while at work mending roads, suddenly called for help and fell down. Immediately afterwards was found to be dead.

External Examination, on May 31st, 1893. Showed no signs of external violence or disease.

Conclusions.—The cause of death cannot be stated from external examination.

Verdict.—*Death from Heart Disease*.

(In the last case there was no history of heart disease and no facts to justify such a verdict being given.)

Upon being asked, in case 44, if epilepsy could be the cause of the death, I could only state that if after an autopsy no organic lesion could be found, this would be a presumption in favour of epilepsy, which is a functional disorder. Being asked if epilepsy was a common cause of sudden death I stated that it was not so regarded, apart from fatal accidental injuries received during the fits. (Of these we had two examples, both from drowning, during 1893.)

Upon looking into the subject more carefully I find that my statement, as to the infrequency of sudden death from epilepsy,

is in accordance with the views of all the medico-legal text-books I have been able to consult as it is nowhere mentioned as a cause of sudden death. This view appears to be taken in the special works on nervous diseases.

On the other hand in the Registratation Reports for Massachusetts, epilepsy is assigned as the cause of 112 deaths out of a total of 42,087, the total for the year 1888, is 1 to 374, and in 1887, 1 to 379. In 1891, the proportion was about the same being 1 to 364. In New York, for 1891, the ratio was 1 to 286. In Paris, Berthillon's Statistic for 1888 gives 1 in every 1,222 deaths from all causes as the proportion due to epilepsy. Of course the proportion of deaths from epilepsy among sudden deaths alone, would be much greater.

Lesser (*Vierteljahrschr. Gerichtl. Med.*, Jan. 1888), in an analysis of 171 autopsies in sudden deaths gives 17 as the proportion due to epilepsy. Wynn Westcott, (*British Med. Jour.* Oct. 17th, 1891), in an analysis of 303 cases of sudden death, mentions 8 cases where epilepsy was assumed to be the cause. Vibert reports a case where a marked congestion was found in the brain of a woman, supposed to have died in an epileptic fit. Of course a cerebral hæmorrhage might be brought on by an epileptic seizure.

That it is not safe to jump at conclusions as to causes of death was shown by a subsequent case (No. 106), where an epileptic girl, in whom the seizures were stated to have become alarmingly frequent had died shortly after a violent convulsion. In this case I gave the stereotyped evidence that the cause of death could not be stated without an autopsy and found afterwards upon making a private autopsy, advanced cirrhosis of the kidneys, the convulsions having apparently been uræmic and not epileptic. I do not think a medical witness is justified in ascribing death to epilepsy until he has satisfied himself by an autopsy that it is not due to some organic disease and even then the statement should only be that the symptoms point to epilepsy and nothing is found at the autopsy to indicate otherwise.

DEBILITY (?)

CASE 11.—F. G., aged 5 months. Stated to have died from neglect of her parents.

External Examination.—Great emaciation. Skin rough and loose. No signs of violence.

Conclusion.—The cause of death cannot be stated without an autopsy. The chances of recovery had a physician been summoned shortly before death would have been diminished by the previous ill-health of the child.

Verdict.—No criminal blame attached.

CASE 95.—S. C., aged about 65. A feeble-minded old woman was lost sight of at a picnic and disappeared. The body was found in a thicket near-by 5 weeks later, and was quite naked, the clothing lying in a heap upon it.

Autopsy.—Aug. 16, 1893. Intense and far advanced putrefaction and denudation of head, and the soft parts of the face and neck have been almost entirely destroyed. These parts are swarming with maggots. No evidence of violence or injury.

The brain is represented by a cup-full of thick greyish fluid.

The muscles are deep red, resembling corned beef and are well preserved. Subcutaneous and omental fat abundant. The abdominal organs are almost free from decomposition and appear healthy. The stomach contains a little coffee colored fluid.

Heart empty. Lungs dried, and shrivelled, the air entering freely about the neck. Organs seem healthy.

Conclusions.—There are no evidences of violence, but their absence cannot be positively affirmed owing to advanced decomposition.

The cause of death cannot be stated.

The jury came to the decision that she died partly from fright and partly from exhaustion through having walked too far. This did not explain in anyway the curious part of the clothing having been removed. Dr. Rutan kindly examined the viscera for mineral poisons, but with a negative result.

CASE 85.—P. C., aged 87. Previously healthy. Found dead.

Eternal Examination.—July 31, 1893. Shows no marks of violence and nothing to indicate the cause of death.

Verdict.—Died from Heart Disease.

CASE 60.—M. G., female, aged 75. Died suddenly while in apparent good health and spirits.

Eternal Examination.—June 19th, 1893. Body of extremely stout woman. No evidences of violence or disease externally.

Conclusion.—The cause of death cannot be stated without an autopsy.

In this case the jury having been firmly convinced that the deceased had died "*parce que le bon Dieu a voulu le retirer de la terre,*" returned a verdict of death from natural causes through that sense of propriety which keeps jurymen from finding fault with the decrees of Providence when doing so involves a loss of time.

APOPLEXY (?)

L. C., aged 55, a large powerful man and free liver. Was found dead alone in his house. Had been seen apparently in good health two hours before.

External Examination.—Great lividity of face. Moderate œdema about ankles. Thin froth in nostrils.

Conclusion.—The dropsy of the ankles indicates that diseased apparently suffered from organic disease of the heart or kidneys. The cause of death cannot be stated.

Verdict.—*Death from natural causes.*

In this case some medical evidence was given which is worth recording. A physician who was summoned after the man was dead had no hesitation in stating that apoplexy was the cause of death. He had not seen the deceased professionally for 12 years. The reason he assigned for the cause being apoplexy was that the deceased had a very short thick neck.

CASE 24.—A. B., male, aged 48. Rather intemperate. Subject to epileptic fits. Recently had an attack of hemiplegia. Was picked up dying one frosty morning having lain on the road all night.

External Examination.—April 2nd, 1893. Recent scratches on backs of hands, forehead, left ear and chin. No other marks of violence.

Conclusion.—It is impossible to state the cause of death from external examination.

Verdict.—*Death from paralysis aggravated by exposure and intemperance.*

CASE 16.—N. C., aged 45, found lying out of doors in cold weather. Had been drinking the night before and had been seen with a comrade with whom he had quarrelled and fought. The companion disappeared for 20 days and afterwards was arrested and was the chief witness at the inquest.

External Examination.—March 14th, 1893. Contused lacerated wound over the left orbit. Behind the right ear there is contusion and abrasion of the skin.

Conclusion.—The external examination does not justify a statement as to the cause of death.

The bruising behind the ear is sufficiently suspicious to justify an autopsy.

No autopsy was ordered. The verdict of death from exposure being rendered.

In the deaths in this group of cases, it will be seen that when no autopsy was performed next to nothing could be affirmed as to the cause of death.

Probably of all the uses to which a medical expert can be put, the making of prefatory external examinations is per-

haps the worst. The only justification of my official function in these cases is that of having said nothing when there was nothing to say. I may finish by mentioning the following verdict, given in a case where I was summoned but could not arrive in time for the inquest, and where the body showed extensive bleeding from the mouth :—" We, the undersigned, find that the deceased came to his death through being suffocated because he was too weak to raise himself from the mattress."

CASE OF PRIMARY ANGIOSARCOMA OF THE UPPER PORTION OF THE LEFT PLEURA.*

By JAMES STEWART, M.D.,

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AND

J. G. ADAMI, M.A., M.D.,

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Cases of primary sarcoma, affecting either the lung or the pleuræ, are far from common, and the case which we are here about to record possesses, for us at least, a peculiar interest, inasmuch as a positive diagnosis of the condition was made during life. The patient, J. Van der Wee, a Belgian by birth, aged 35, had been for some years a glass blower. He first felt unwell in the beginning of February, 1894, experiencing constant pain in the left side of the chest. Shortly before admission into the hospital (upon the 7th of April) he suffered from frequent vomiting. Upon admission it was noticed that the upper portion of the left thorax presented very definite bulging, and from the third rib upwards upon the left side there was absolute dullness upon percussion, while auscultation over this area only gave a distant blowing breathing. Vocal fremitus was absent. The dullness and the auscultatory signs were the same both above the clavicle and above and around the upper portion of the scapula behind. While in the hospital pressure symptoms developed in the left arm, the left radial pulse was distinctly weaker than the right, and the difference was well shown in sphygmographic tracings obtained from the two radials; the surface temperature of the left arm was higher than that of the right, and there was pain extending down the inner side of the left arm.

During the last week of life the patient suffered from excessive vomiting, and was unable to retain any nourishment. Three days before death, which occurred on May the 5th, the patient was noticed to have become suddenly peculiarly anæmic, within 24 hours he became delirious, and although a few hours before death his condition seemed to be improved,

* Read before the Medico-Chirurgical Society, April 20th, 1894.

there was a return of the symptoms and he died with comparative suddenness.

The absence of vocal fremitus, complete dullness on percussion and the pressure symptoms, together with the absence of any marked expectoration, and again the absence of pulsation, led one of us (S.) to a diagnosis of sarcoma. On April the 15th, in order to confirm this diagnosis, an ordinary Pravaz syringe was carefully sterilised, the skin over the region of most considerable bulging, namely, over the second interspace on the left side in front, was washed and rendered aseptic, and in the presence of both of us, Dr. Deeks, the resident physician, passed the needle into the swelling and obtained without great difficulty several drops of fluid. This fluid was in the main composed of blood. In it could be seen small whitish or creamy masses of more solid material. The needle was immediately passed through the side of the cotton-wool plug of a tube of sterilised Glycerine Agar-Agar. A few drops of what remained in the syringe were immediately examined unstained under the microscope, but beyond plentiful red corpuscles nothing could be clearly distinguished; later one of the small whitish masses removed from the surface of the Agar-Agar, and stained under the cover slip with a dilute solution of methylene blue, showed the presence of large numbers of cells of a size rather larger than that of ordinary leucocytes and with nuclei which instead of being rounded were of a blunt oval shape. Together with these cells there could occasionally be seen definite thin spindle-shaped cells with nuclei of a more elongated oval or spindle-shaped appearance, but more rarely there were to be recognized larger coils, three or four times the diameter of the cells which formed the main mass. These were filled with minute oily droplets, and had also a more pigmented appearance. It may be added here that the Agar tube placed in the incubator at 37°C. remained completely sterile, save that after several days there developed one small whitish growth which was found non-pathogenic and which was evidently a contamination from the air.

These cells were from their appearance neither pus cells nor the products nor the accompaniments of any form of chronic inflammation; their appearance entirely tallied with that of a sarcomatous nature, and it was held that here there could

be none other than some rapidly-growing oat-shaped cell or oval celled sarcoma present, and in fact the patient was brought before the Montreal Medico-Chirurgical Society upon April the 13th, and the condition was there demonstrated as being one of sarcoma of the lung, or pleura.

At the autopsy performed upon May the 6th, the body was found to be that of a well-developed adult, of medium size, with no signs of emaciation or œdema. There was no difference to be noticed between the two arms, either in circumference or in other respect. The head was not examined. Upon opening the thorax a large soft mass was discovered extending from the very upper extremity of the left side of the thorax down to the level of the sixth rib in the left mammary line. At the level of the second rib the mass extended from the junction of the second rib with its cartilage on the right side across the whole of the left chest. Below this level its edge slanted obliquely towards the left nipple and to the level of the sixth rib as above mentioned. The upper portion of this mass, down to the level of the third rib, was apparently firmly adherent to the costal pleura, so that in order to remove the growth in part this had to be dissected off from the ribs. Below the level of the third rib the wall of the capsule appeared to be thinner; it was of a dark bluish colour and resembled a cyst containing blood. The heart was displaced downwards, and to the left the right lung showed slight adhesion along the fourth rib, behind and forward, as far as the anterior axillary line. Upon removing several inches of the upper ribs upon the left side in order to dissect out the tumour in part it was found that the intercostal humeral nerve passed down from the pleura within the thoracic cavity, that is to say, to the inner side of the ribs, and that it appeared to be enmeshed or implicated in the capsule of the growth, emerging laterally between the second and third ribs. The first and second ribs of the left side were slightly eroded as far as their cartilages, the third as far as the axillary line, the fourth as far as the angle.

Upon removing the greatly enlarged left lung, the mass upon the upper and anterior surface was found to be peculiarly soft, and so soon as the capsule formed by the costal pleura was cut in two, a large amount of soft semi-fluid material of a dark purple color easily passed out through the openings

made. As much as 700 cubic centimetres of this material was taken out at the autopsy, and a quantity almost equal in amount was still left within the sac removed at a later period. Save that some portions of this material were of a slightly denser consistency, the whole might have been taken for soft breaking down blood clot.

Upon cutting up the bronchi of the left lung, and passing a probe down the various smaller-sized bronchi of the upper portion of the lung, no communication could be detected between these and the tumour mass, and careful examination showed that this mass lay in the pleural cavity above and anterior to the upper lobe of the left lung. There had evidently been an old chronic pleurisy of some standing, causing adhesion between the upper lobe or the lower boundary of this lobe and the costal pleura, and it was in the sac formed thus between the two layers of the pleura over the upper lobe that a tumour had developed and had extended. The upper lobe itself was greatly compressed, the lower lobe showed compression to a lesser extent; the right lung was smaller than normal. It presented a certain amount of emphysema. At its apex were three or four old calcareous tubercular nodules well encapsuled. The pericardium contained an ounce of slightly blood stained fluid, the heart showed no signs of inflammation, the valves of the heart in general were normal, the abdominal organs presented nothing calling for special remark in this connection. No secondary growths could be recognized by the naked eye in any of the organs.

Upon examination of portions of the softened mass of the tumour, carefully selected from various areas, and hardened either by placing in boiling water for one minute or by Müller's fluid, it was found that the lower edge of the tumour mass was almost entirely, if not quite, pure clotted blood; portions rather denser in their consistency originally, but still equally blood-stained, presented a very interesting condition. They were found to be formed of lobules of sarcomatous tissue, whose cells showed up very well by contrast staining, either with methylene blue and eosin, or with hæmatoxylin and eosin. Running in various directions through these lobules of sarcomatous tissue were greatly dilated vessels of a purely

embryonic type, with walls so delicate that the flattened cells forming them could only here and there be recognized. Immediately around these vessels the sarcoma cells were more densely arranged; these cells were identical in appearance with those that had been removed by the hypodermic needle. They were slightly oval, their nuclei were also oval and stained well, and they were definitely larger than, in fact almost twice as large as, the leucocytes which could be seen here and there lying within the vessels. Away from the vessels the cells became more loosely arranged, and here and there stained badly, inasmuch as lobules were separated from each other by very extensive effusion of blood, and this extravasated blood appeared to be causing the destruction of these outer layer of cells, the extravasation extending in between them.

Careful study of sections taken from various points over the surface of the upper lobe of the left lung led to the conclusion that the tumour had not originated from the visceral pleura; in general the tumour mass could be easily removed from the surfaces of the lung, leaving this relatively smooth and glistening. On the other hand, sections through the costal pleura from the level of the second interspace upwards showed that here the pleura had undergone great fibroid thickening and that it was infiltrated by masses of sarcoma cells. It would seem evident, therefore, that the tumour had originated, not primarily in connection with the lung, but in connection with the costal pleura.

This condition presents very many points of interest; it confirms the diagnosis that had been made *intra vitam*. The rapid growth of the tumour and the erosion of the upper ribs, indicate that in its development this tumour had pressed upwards and had thus affected both brachial and nerve supply. The fact that the tumour was extra pulmonary, will explain the remarkable absence of direct pulmonary symptoms observable during life; while the character of the growth is fitted to throw light upon the symptoms which immediately preceded death. As we have mentioned, the tumour was of a peculiarly vascular nature; even those parts which were found to stain so well, and which showed most clearly the sarcoma-

tous nature, were when removed from the body, of a consistence scarcely firmer than that of recent blood clot, tearing apart with great ease. In addition to this natural softness of consistency on the part of the tumour, there had evidently been a very great amount of hæmorrhage into the growth, so that the tumour in its lower part was nothing but pure blood clot and in the rest of the area was a mixture of blood and sarcoma tissue.

The question arises, had these hæmorrhages been continually occurring during several weeks, or had there been one great and extensive hæmorrhage, which coupled with the breaking down of the neoplasm, may be looked upon as having been the one immediate cause of death. Undoubtedly there had been a certain amount of hæmorrhage and breaking down of the tumour some weeks before death. This alone is capable of explaining the presence of the occasional large leucocytes, or, if the term may be employed, "Staubzellen," which were found at the time of the exploratory puncture in April, large cells containing the debris of the fatty degeneration of the sarcoma tissue, together with a certain amount of pigment derived from extravasated blood. But we are, notwithstanding this evidence, inclined to believe that shortly before death a most extensive hæmorrhage had occurred, for this alone will account for the sudden onset of extreme anemia, which was noticed three days before death, and the almost equally sudden low delirium which ensued. That this hæmorrhage was in itself sufficient to account for death we will not say, but it had led to extensive breaking down of the sarcoma tissue, and this hæmorrhage, breaking down of the tissue and absorption of the products formed together, in our opinion, a sufficient cause.

Case Reports.

A VAGINAL NEUROSIS (?)

By STANLEY S. CORNELL, M.D., C.M., Athens, Ont.

Mrs. A., a methodist minister's wife, aged 42 years, consulted me in the summer of 1892 for relief of symptoms pertaining to vaginal discomfort, manifested by sensations of heat and burning, generally constant, and aggravated by sexual intercourse.

History.—At the age of 37 years the menopause had been completed. The time occupied in this process of change I have forgotten. The patient married at her 32nd year, and has remained sterile. She encountered the usual difficulties experienced by virgins in the acquirement of perfect sexual relations with their husbands, but had enjoyed freedom from pain in coitus for a period of eight years. At her 40th year the patient observed that intercourse was accomplished less easily than it had been, the impression arising before herself and husband that a "tumour" obstructed the vagina. Two years later she came to my office for treatment.

Physical Examination.—The patient is about 5 ft. 5 in. in height, and weighs 130 lbs. Her complexion is light, hair light brown, bones small, muscles but moderately developed, and body somewhat emaciated. Systemic anæmia is apparent in the pallor of the oral and conjunctival membranes of the skin, and by certain general symptoms characteristic of that affection. Examination fails to give evidence of disease—involvement of the lungs, heart, kidneys, brain or spinal cord.

Genital Organs.—1. Vulva normal in the relation of its parts; the internal surfaces of the labia majora hyperæmic and dry, but not hot.

2. Hymeneal remains existing as roughened protuberances, pinkish in color.

3. Vaginal orifice and cavity small; vaginal membrane dry, of normal temperature, preserving its cristae, and exhibiting the changes of involution.

4. Cervix uteri lying high within the vagina, and presenting

a normal lining membrane ; the cervico-vaginal membrane showing the same coloration as the membrane of the vaginal walls.

5. Uterus retroverted, and involuted to the degree of possessing infantile characters. Its cavity measures one inch by the sound.

By the speculum, the vaginal membrane was observed to be flushed, pink longitudinal and circular areas existing over the anterior and posterior walls, and free from mucus. These are all the changes that were detected by the eye.

The case seemed to possess characters that depended upon one possible factor for the production of difficult intercourse, viz., insufficient vaginal secretion to permit easy introduction of the penis, and probably included a disproportion in size between the sexual organ of the husband and the vagina of the patient.

It is significant that during the active change of the patient's menopause, vaso-motor phenomena were but little pronounced ; she had experienced slight flushings, but had never observed localized perspirations, nor numbness, prickling, or tingling.

The patient was neurotic in her tendencies ; she has been subject to back ache, leg ache, feelings of weakness in the lower extremities, and easily induced mental exhaustion. Her education had been conducted toward the comprehension of the arts, her schooling perfect, and her home a comfortable one.

Married to a man ten years her senior, harassed by the anxieties incident to a moderately paid clergyman's life, meeting with social discouragement, but endeavouring always to cultivate agreeable relations with those much less advanced than she—it was inevitable, under the further condition of difficult sexual procedure, that the patient should become distinctly nervous in her disposition.

At this time I was convinced that I had to treat a case of vaginitis, the management of which suggested itself as including residence apart from the husband for a variable period, correction of anæmia, and astringent applications to the vagina.

Blaud's ferruginous pills were given after meals, and zinc sulphate solution (gr. ii — ʒi) was twice a week applied to the vagina with strong atomizer pressure.

After the lapse of three weeks, improvement appeared to advance locally and generally; the patient became cheerful, visited numerous friends, and drove many miles quite frequently. The local improvement was observed as a subsidence of vaginal hyperæmia and tenderness, the vaginal membrane becoming paled.

Mental depression—strongly marked at the beginning of treatment—being now superseded by cheerfulness of disposition, and the relief of such general symptoms as fatigue, pains and aches, being evident, I felt much encouraged to dismiss the patient, and enjoined the use of the hot vaginal douche and the continuation of the ferruginous pills.

The uterus, in its condition of complete involution, could not have exercised an obstructive effect upon the blood flow of the vagina; consequently its replacement was not considered an essential of treatment.

The patient returned home, two hundred miles distant, and remained quite well during two whole months, when she wrote that the symptoms of which she had suffered before undergoing treatment had reappeared: vaginal heat and tenderness were becoming intolerable, and general lassitude rendered her unfit to accomplish home or church duties.

The patient again came to my office, and I noted that the general and local conditions were as they had been at the outset of my attendance. But there had arisen another factor to further torment this poor woman—sexual intercourse had become impossible.

Inquiry was now advanced toward the existence of vaginismus; this was not manifest to the finger; the vagina, although diminutive from involution, easily admitted the Sims speculum No. iv. Vaginal dryness was not causative of the condition of sexual difficulty, inasmuch as a secretion of mucus could be induced by light friction of the vaginal wall.

Sexual failure did not result from incompetency of the husband, who is a vivacious healthy man, but in all likelihood occurred because of the patient's fear of painful contact.

The facts that vaginismus was absent, vaginal secretion would

form after irritation of the vaginal walls with the finger, and that the vagina was not less roomy than it had been before treatment, seem to support this view.

Addressing the treatment now to requirements quite different from those at first evident—endeavouring, indeed, to satisfy the patient's conception that closure of the vagina was the element of difficulty that must be dealt with—I practised vaginal dilatations every second day.

The method of dilatation employed was this: The patient was placed upon the plane surface of the examining table, with legs well drawn up: the Cusco speculum was introduced within the vagina with blades first in contact with the anterior and posterior vaginal walls, and next against the lateral walls. In these relations the speculum blades were slowly separated to their greatest extent, the distension of the vagina occasioning a sense of extreme stretching.

What the physical effect was, in addition to the unavoidable compression of many of the dilated vaginal blood-vessels, I do not know; the psychical result was gratifying, in that the patient believed herself to be undergoing rapid recovery. Her temperament assumed continued cheerfulness, and freedom from previously existing vaginal sensations predominated.

At this time I noticed a gradual paling of the vaginal membrane,—a physical change not dependent upon the speculum compressions, which were neither uniformly distributed over the vagina, nor continued longer than a week and then at intervals of every second day. The assurance that permanent enlargement of the vagina would follow the stretching process seemed to exercise a direct effect upon the vaginal vascular supply by relieving the patient of all apprehension directed toward future difficult intercourse.

At this period of my conduct of the case, the patient's father became much reduced through the changes of a long-standing arterio-sclerosis. This circumstance brought the patient into a constant worry for her family's domestic outlook, and coincidentally the vagina resumed its accustomed blush, and with it came that disordered sensibility designated "distress."

The treatment consisted of constitutional remedies, iron, arsenic and strychnine, and the tri-weekly vaginal insufflation of powdered bismuth subnitrate, tannic acid, camphor and acacia, alternated occasionally with a dry cotton tampon. Notwithstanding the faithful employment of these measures, the vaginal appearances were those of blushing and pallor—the former if the mind were depressed, and the latter if the spirits were in the ascendant.

I wish to demonstrate at this stage of the treatment, which was continued four months, that the affection of the patient was a neurosis ; and I propose, in substantiation, to show that the vascular changes in the vagina were too rapid, and too plainly indicated the relation between cause and effect, to permit their being classed as belonging to vaginitis.

It is necessary to state that the patient was of an affectionate disposition, and the progress of her father's illness had much to do with her own advancement or retrogression in health. The father had grown weak, his skin giving out a urinous perspiration, and the urinary secretion becoming reduced to two fluid ounces a day ; his intelligence became more and more blunted, and uræmia might at any time result in his death. It was during this ordeal, involving filial anxieties, I concluded that the patient's affection was purely a vaginal neurosis aided in its developments by neurasthema.

When the father's intelligence dimmed, and the indications of speedy death were present, the local neurosis of the patient manifested its typical characters in pink blushing in longitudinal and circular areas upon the walls and in the fornices of the vagina ; contrarily, when the father aroused from his semi-stupor, and other favourable marks in his case were apparent, the vaginal changes advanced toward a paling of the membrane.

Observing that the affection depended for its existence upon the state of the patient's temperament, I applied no further local treatment, but insisted upon bi-weekly consultations. With the varying health of her father—now better, then worse—the flow and ebb of the patient's vaginal blood-supply kept pace. Finally the patient's father improved, at which juncture

her mother died suddenly ; coincidentally local disturbances subsided, because the subject of this history had just reason to forget her own illness in view of the calamity that had so suddenly fallen upon her house.

The vagina paled once more, itching, burning and sensations of "uneasiness" were gone, and I gladly bade adieu to the patient.

Two reports received 2 and 3 months after her return home assured me that improvement was progressive, intercourse being no longer a difficult factor in her life's work.

Bearing an important relation with the vaginal disturbances, of which the patient gave me the history, was the condition of neurasthenia ; back ache, leg-ache and shoulder ache had played their role in association with head-ache, mental fatigue upon slight intellectual effort, and general muscular tremor. "Tinglings," "crawlings," "pins and needles," and localized perspiration had never been experienced by the patient ; apparently these characteristics of disordered sensibility had localized themselves in the vagina.

March, 1894.—The patient reports herself as being quite well.

Differential Diagnosis—From Vaginitis—In vaginitis a serous or sero-purulent discharge is usually present ; in the case described, no discharge was observed, except such slight show of mucus as was noticed after irritation of the vaginal walls with the finger. In vaginitis, epithelial abrasion is detected at some stage of the disease ; in the case under consideration, no epithelial loss occurred. In vaginitis, dilated blood vessels are visible coursing through the membrane ; in the case treated upon, individual dilated vessels were not seen—there existed areas of blushing, alternating with pallor and normal hue.

Reviews and Notices of Books.

Essentials of Practice of Pharmacy. Arranged in the form of questions and answers prepared especially for Pharmaceutical Students. By LUCIUS E. SAYRE, Ph. G., Professor of Pharmacy and materia-medica of the School of Pharmacy of the University of Kansas. (Second edition revised), pp. 200. Philadelphia, W. B. Saunders, 1894.

This is one of the "question-compends" issued by this firm. While it is open to many of the objections raised against this form of book, it is decidedly better than the usual quiz, it is fuller and contrives to convey more information than is usual in the categorical answers given to the questions asked. The student will find it very useful provided it does not lead him away from his standard text-books.

The Medical Chronicle. A monthly record of the progress of Medical Science, conducted by the Professors and Lecturers in the medical department of the Owens College, Manchester. Edited by W. J. Leech, M.D., and W. J. Sinclair, M.D. Manchester, John Heywood. Subscriptions, 12s. 6d., payable to A. H. Young, Dean of the Medical School, The Owens College, Manchester.

We take the opportunity afforded by the commencement of a new series to call the attention of our readers to this excellent journal—a journal which in its especial line may safely be said to have no equal—and one which, had it been published in London instead of in the provinces would long ago have obtained a world wide recognition. As it is we have heard it referred to as the model English medical journal by leaders of the profession in America as on the European continent.

The important feature of the Medical Chronicle is that it fulfils its title. Each month's number contains from thirty to forty pages of critiques upon the most important articles of recent publications in all branches of medicine and surgery. The writers of this chronicle do not merely give an abstract of the contents of each article, but whether they treat of a single paper, or, as is more usual, deal with several papers upon closely related subjects, they carefully criticise the results

obtained by various workers, so that each number of the journal in question contains a series of essays, short but none the less valuable, signed by the writers, upon the topics which are interesting the medical world for the time being. Other medical papers give, it is true, occasional articles summing up the advances made in one or other branch of one subject, and indeed without undue pride we consider that the various retrospects given in this journal and signed by their authors have contributed much to its popularity and good standing with the profession; but the Medical Chronicle makes such the main feature, and in this way has become of the greatest value to those who wish to keep abreast of the latest work in medicine generally or in their especial department. It must be added that the original articles, mainly tho' not entirely by members, past and present, of the Manchester Medical School are of a high standard. Of these we would more especially refer to the excellent series of articles that have appeared during the last nine years upon diseases of the nervous system, by such authorities as the late James Ross and Dietchfeld, and their pupils Thorburn, Reynolds, Bury and Williamson.

The new series indicates a significant change in the method of conducting the journal, which from being a private publication has now become the organ of the Owens College, and is henceforth to be conducted by the Professors and Lecturers of the Medical Department of the College. Thus to mention the senior members only, Dietchfeld, (Medicine); Thomas Jones, (Surgery); W. J. Sinclair, (Obstetrics and Gynæcology); Leech, (Pharmacology); Dixon Mann, (Medical Jurisprudence); Arthur Ransome, (Public Health); W. Stirling, (Physiology); and Young, (Anatomy); became all members of the editorial committee.

The first number of the new series contains original contributions by Dietchfeld on a peculiar form of idiopathic intermittent fever of pyæmic character with record of three cases, by Thomas Jones on Cancer of the Rectum and its treatment by excision in which Kraske's method of removing the cæcyx and lower part of the sacrum is strongly recommended, and by Sinclair on Ventrofixation of the uterus. The main items of the Chronicle are, in medicine a review of articles upon

Syphilitic Spinal Paralysis by Erb, Kuh, Oppenheim and Lamy; in Pathology of articles upon Myxœdema, Cretinism, Acromegaly, Exophthalmic goitre and allied Cachexias, by Boyce and Beadles, Putnam, Williams, Greenfield and Marie, together with a retrospect upon English and American Bacteriology in 1893; in Pharmacology an article upon the treatment of rabies by the serum of immune animals; in diseases of children, a review of articles upon the feeding of infants, by Rotch and Holt; in Physiology, a review of the recent researches on the physiology and histology of glands.

Our commendation of this excellent journal may seem to be extreme; we have however known it so long and have found it of such high value that we have no hesitation in awarding to it our highest praise, and in recommending it to all who desire to keep level with the advances of modern medicine.

Robley Dunglison, M.D., LL.D. A Dictionary of Medical Science. Twenty-first edition, thoroughly revised and greatly enlarged, by RICHARD J. DUNGLISON, A.M., M.D., pp. 1181. Philadelphia: Lea Brothers & Co., 1893.

That this dictionary has reached its twenty-first edition is sufficient evidence of its worth and popularity, and renders any formal introduction of it to our readers quite unnecessary. Nevertheless, while the Dictionary itself is so well known on this continent, it deserves mention that the present edition is an advance upon its predecessors in several respects. The new subjects and terms treated are no less than forty-four thousand, sufficient in themselves to fill a large volume. There has been a praiseworthy attempt to render the work an epitome of the existing condition of medical science. Thus to take an example under the heading Hernia, besides the definition of the condition, a condensed table is given of the various forms, and a brief resumé is given of the therapeutical indications; under the heading Murmurs, besides a description of the various forms, a table is given of the significance of the murmurs of valvular origin; under Bacteria, the leading classifications of Naegel, Zopf, Baumgarten and Cohn are recorded, and a paragraph is devoted to the question of the determination of the pathogenic properties, another to modes of culture of the bacteria. In addition, the work is for the first time

made a pronouncing dictionary, and on the whole the pronunciation given is that which will satisfy those on both sides of the Atlantic, though that words in it which have become thoroughly incorporated into the language should, by the compiler and by so many others, be still pronounced as though they are distinguished foreigners is a matter for regret.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian works published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS—MAY, 1904.

DOMINION MEDICAL JOURNAL.

- (1.) Treatment of lateral curvature of the spine by non-restriction and development methods—B. E. McKenzie, p. 127.

CANADIAN PRACTITIONER.

- (2.) The study of anatomy by frozen sections—A. Primrose, p. 319.
 (3.) Diagnosis and treatment of chronic urethral discharges—E. E. King, p. 331.
 Cases in practice—B. E. McKenzie, p. 340.

ONTARIO MEDICAL JOURNAL.

- (4.) Mistakes in practice—Geo. Hodge, p. 317.

L'UNION MÉDICALE DU CANADA.

Metrorrhagia from fibroids arrested by a single cauterization by chloride of zinc—Chas. Verger, p. 225.

- (5.) Clinical lectures upon injuries of the eye—A. A. Foucher, p. 319.
 (Continued.)

MARITIME MEDICAL NEWS.

- (6.) Adenoid growths in the pharyngeal vault—E. A. Kirkpatrick, p. 279.
 (7.) Carcinoma of the stomach—C. A. Foster, p. 281.

(1.) The use of gymnastics and intermittent pressure correction is recommended instead of the ordinary treatment by continuous employment of braces.

(2.) Dr. PRIMROSE has used photographs of frozen sections for teaching purposes, projecting them on a screen by means of a lantern. By this means the material is demonstrated to a large class, who afterwards have opportunities of studying the sections themselves.

(3.) The use of the simple endoscope, with illumination by a hand mirror, is recommended to those who have not at their disposal the new expansion electrical apparatus.

(4.) Dr. HODGE gives much excellent advice, illustrated by numerous examples. He favours strongly a good and thorough system of routine examinations as the greatest safeguard against error.

(5.) Rupture of the sclerotic from blows of the fist are instanced. A case is reported where dislocation of the lens was produced in this manner. In one case of contusion by the horn of a cow, symptoms of sympathetic ophthalmia developed themselves in spite of the absence of any wound, and enucleation had to be practised. In one case where a violent shock was received while telephoning during a thunderstorm, abundant hæmorrhage in the anterior chamber was observed, and after this was absorbed, sub-retinal hæmorrhages were detected. This was followed by detachment of the retina and the vision was permanently reduced to $\frac{5}{30}$. The necessity of caution in giving medico-legal opinions as to the ultimate effects of traumatism of the eye is insisted upon.

(6.) The symptoms and result of treatment in 48 cases are tabulated. The treatment followed was extirpation, usually under chloroform. Cocaine was used in five cases only.

(7.) The case recorded occurred in a man aged 30, and the illness lasted two years. At the autopsy the growth was found to be scirrhus and situated in the pylorus. It had invaded the diaphragm, pancreas and liver. No mention is made of secondary nodules.

CANADIAN VITAL STATISTICS.

Census of Canada, 1891. Bulletin No. 14. Mortality. Bulletin No. 15. Causes of Death. By George Johnson, Dominion Statistician.

These statistics were compiled by adding a death schedule to the census returns and offering the enumerators 3 cents for each name of a dead person recorded in the schedule. For the deaths recorded this represented a total of \$2,003.64, certainly not an exorbitant sum. In addition forms were sent out to all the medical men whose addresses could be found. The number of these filled and returned, though not so great as could be desired, still sufficed to check the returns of the enumerators as to causes of death, upon which point the popular mind "is very apt to be limited to some few general terms without the specific names which mean so much to medical men."

The result was that 67,888 deaths were registered, a rate of 14.10 per thousand or 1 in 71, for the twelve months ending April 6th, 1891, contrasting well with the death rate of

England and Wales, which was 19.5 per 1000, or 1 to 51 living, and better even than Australia which has a death rate of 15 per 1000, or 1 to every 70. The accuracy of these returns was tested by comparing them with the Ontario statistics (which are obtained by registration,) the result being that the numbers tally almost exactly both as to total deaths, deaths of children under 1 and under 5 years, and relative proportion of males and females.

It is curious to note that in Quebec the death rate among Protestants was 10.8 per 1000, while that among Roman Catholics was 20.1 per 1000. In Ontario the deaths among Roman Catholics was 14 per 1000, and among Protestants 10.8 per 1000. If correct, this is a matter which merits earnest attention from the church authorities.

The number of births during the same period was 135,843, or 28.3 per 1000 and thus making a surplus of 100 per cent. over the death rate, the birth-rate being highest in Quebec, 36.86 per 1000, and lowest in Ontario 24.50; P. E. Island 24.45 and British Columbia 23.16. We pass over a variety of interesting data and calculations which are given, to consider the second half of the report dealing with the causes of death.

The system of nomenclature followed is that adopted by the Registrar General of England.

The number of deaths for which no definite cause was assigned was 10,800 or $7\frac{1}{2}$ per cent., as compared with over 28 per cent. in 1881, which, from a statistician's point of view, is highly satisfactory.

The calculations are made for the most part in units of per thousand, or per million living; this, though it lacks the uniformity given by the continental system of always adopting the unit of ten thousand is probably more calculated to render the results intelligible to persons who are not statisticians. One can readily form a concrete idea of a population of one thousand or one million, but ten thousand is to most persons a purely abstract quantity.

Compared with England, Canada shows a higher death rate from zymotic diseases, (which would probably be higher still

if the returns were accurate) as will be seen from the accompanying table.

CANADA				ENGLAND.
CAUSES OF DEATH.	Total Deaths.	Percentage of Different Causes.	Rate per Million Living.	Rate per Million Living.
Zymotic.....	15,764	33.22	3,283	2,541
Parasitic.....	78	0.13	16	24
Dietetic.....	35	0.06	8	81
Constitutional.....	9,310	13.72	1,940	3,374
Developmental.....	6,818	10.04	1,420	1,611
Local.....	22,492	33.13	4,685	10,364
Violent.....	2,391	3.53	498	633
Not Specified.....	10,800	7.55	2,248	900
Total.....	67,688	100.00	14,098	19,548

For an equal number of living persons there were 1,064 deaths among males and 1000 among females. The death rate among males exceeded that of females in zymotic, local, violent and unspecified causes, while that among females preponderated in constitutional and developmental diseases.

Phthisis is stated to have caused 7,490 deaths, or 10 per cent. of the total, being at the rate of 1.55 per thousand living.

It may not be out of place to call attention to what we consider the defects in this report, and in this connection it may be said that it would perhaps have been of practical utility had the compiler taken pains to state plainly the weak points of these statistics and so warn his readers against being misled.

In the first place the system of classification employed by the Registrar General of England, still follows very closely the nosological tables prepared by the College of Physicians some thirty years ago. These, though excellent in their day and far in advance of previous nosological systems, have now become decidedly antiquated, and while there may be reasons for their being retained in a country where they have long been used, it hardly seems advisable for Canada to adopt them. Although no doubt an absolutely perfect classification of diseases is at present unattainable, yet the importance of studying the results of sanitation upon preventible infectious diseases would justify the use of some mode of classification

which would tend to place this class of deaths together instead of separating them and mixing them up with non-infectious diseases.

The system followed in the census bulletin places "all diarrhoeal and catarrhal affections" among zymotic diseases. Parasitic diseases are stated to include (a) thrush, (b) worms and other parasites. This class furnishes only about one-eighth of one per cent. of the total mortality and we fear the cases which make it up are based largely upon wrong diagnoses.

Dietetic diseases, which comprise only 35 deaths in all or one twentieth of one per cent. of the total mortality, also form a separate class. This class is subdivided into three groups, viz., privation of food, 8 cases; scurvy, 3 cases and alcoholism, 24 cases. Now if alcoholism is so extremely rare, one is inclined to think that there is far less need of temperance legislation than has been generally supposed. Of the 24 victims of drink, 23, we blush to say, were of the male sex, while (tell it not in Gath) more than half, including the lady, were residents of Ontario; and in the Northwest, that land of the prodigal son and the Indian given over to fire-water, not one single death resulted from this cause.

Out of 6,815 deaths from developmental diseases 4,310 are put down to old age, which thus causes over 6 per cent. of the entire mortality, a greater number than the combined deaths from diphtheria and typhoid.

Under local diseases, it is stated that only 58 deaths occurred from uterine and ovarian diseases, and only 25 females died of peritonitis, while appendicitis is not even mentioned.

Among violent deaths from causes other than criminal, 48 only are given as the result of fractures and contusions, apart from the 183 fatal railway accidents recorded.

In deaths due to criminal violence, there were recorded 80 suicides, the number assigned to the province of Quebec, being only two-thirds of the annual number observed in the coroner's court of Montreal alone. In addition there were 3 judicial executions, 16 homicides *and no infanticides!*

Of sudden deaths from unknown causes, we find only 59 given for the whole of Canada.

The examples we have given have a decided tendency to shake our confidence in the census as a means of obtaining

mortality statistics, and while the arithmetical accuracy of the statistics, and the clear and concise manner in which they are set forth leave little to be desired, it is a matter of regret that the statistician has not been furnished with more reliable material to work with. It is self evident that mortality statistics, to be accurate, must be collected in the first instance under strict medical supervision, and we hope that before the next census some efficient system of registration and death certification may be in force.

BACTERIOLOGICAL ANALYSIS OF CANADIAN WATER SUPPLIES.

By E. B. SHUTTLEWORTH.

We see in the Toronto *Evening Telegram* of May 10th, 1894, a report of some biological water analyses, made at the order of that journal, by Prof. E. B. Shuttleworth, of Trinity College. The object was to determine the relative purity or impurity of the Toronto water supply as compared with that of other Canadian and American cities. The exact test adopted is difficult to make out from the report of the analyst, but, as we understand it, consisted in the estimation of the number of bacteria colonies per cubic centimetre growing from samples of water, which had often been shipped some hundreds of miles before it was examined.

The results obtained were as follows:—

WATER FROM	Colonies per cc. at room temperature.	Colonies per per cc. at 40°C.
Buffalo	130	5
Barrie	160	2
St. Catharines.....	365	6
Hamilton	455	2
Peterboro.....	520	5
Rochester	600	4
New York.....	685	13
Belleville	705	5
Ottawa	710	3
Toronto.....	970	5
Guelph	1035	6
Quebec	1045	6
Berlin	1380	57
London	1820	4
Montreal.....	1895	12
St. Thomas	1970	2
Collingwood	2265	2
Walkerville	2360	51
Windsor.....	2620	71
Lindsay	3470	18
Stratford.....	3570	14
Goderich	5330	6
Detroit.....	5510	152

According to this table, the water supplies of Toronto and Montreal occupy an intermediate position in the scale, the Toronto supply being, however, somewhat the better of the two, both as regards the total number of bacteria and those germs capable of growing 40°C ., and therefore having more affinity to the germs of disease than to the water bacteria. It may further be stated that none of the waters tested, showed any alarming evidence of pollution. As far as concerns the question at issue, viz., the purity of the Toronto water supply, the results are fairly reassuring, in spite of the sensational reports which have been circulated about that beverage, we do not understand, why the water of Lake Ontario, which has been known, as a rule, to be free from bacteria or at most to contain less than 100 per c.c., managed between the intake and the tap to have this number increased to 970, if no contamination occurred. The fact that a larger number of bacteria are present in smaller bodies of surface water elsewhere throws no light upon this point.

What is most defective about the report, however, is the fact that the results are based upon the analysis of a single sample only, and this to our mind makes the report of very little value. The number of bacteria in the same water supply will vary greatly at different seasons of the year, and, therefore the true character of the water can only be judged by the analysis of a number of samples taken at stated intervals.

In the case of Montreal, for example, the bacteriological analysis made a few years ago, covered a period of eighteen months, and the number of bacteria per cubic centimetre varied at different seasons between 9 and 2400. The number given as typical of the Montreal supply occurs only at two seasons of the year, viz., after the melting of the snow in spring and after the rainfall at the onset of winter. As this is probably the case with all the supplies examined, it would be impossible to judge of the significance of the number of bacteria in the water, apart from the local meteorological conditions. Instead of this the dates when the samples were collected are not even mentioned.

No chemical examination appears to have been made.

Society Proceedings.

THE MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, April 20th, 1894.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Dr. Edward J. Kennedy was elected an ordinary member.

Angiosarcoma of the Lung.—Dr. JAMES STEWART brought before the Society a young man suffering from a morbid growth of the lung. (See page 909.)

Melanotic Sarcoma of the Foot.—Dr. ARMSTRONG exhibited the specimen which had been removed from the sole of the foot of a woman aged 67. Five years ago she had stepped upon a nail which had pierced the sole. After it was removed the wound healed; one year later it re-opened and discharged pus for some time and again healed. For the past four years it has periodically opened, discharged and again healed up, sometimes remaining closed for a month or two. During this time she had been doing the work of a servant and never had any medical attendance until a month ago, when she called upon him. Behind the middle and fourth toe there was a mass about one inch square which resembled an exuberant granulation. Under ether this mass was shelled out with a blunt spoon, it being connected with neither tendon nor periosteum. On examination a lymphatic gland, about the size of an egg was found below Poupart's ligament, the patient not being aware of its presence. The hæmorrhage after removal was considerable, one or two little vessels spouting.

Dr. Armstrong thought at the time that the condition was malignant, which suspicion was confirmed by Dr. Adami's report. Such cases are instructive, inasmuch as they show that irritation may sometimes set up a growth in situations where otherwise it would not be at all likely to occur or may change the character of a growth from a benign to a malignant type. This principle applies to the breast also, and should impress us with the importance of paying early attention to any lesion which, by continued irritation, may develop into a malignant character in the later years of life.

Dr. ADAMI stated that the somewhat alveolar arrangement of the cells in portions of this tumour brings up a much debated

question as to the nature of these melanotic sarcomas. Are they ordinary sarcomas, or a mixture of sarcoma and carcinoma or a very malignant form of pure sarcoma? Here, however, the evidence is certainly in favour of a pure sarcomatous nature, the growth originating immediately beneath the malpighian layer of the epidermis. This tumour differs from many other melanotic tumours by being very well defined, and there being not much evidence of cell growth at its borders, a condition uncommon in primary melanotic growths. It being very superficial may account for it not being attached to the deeper structures. It will be interesting to note if any secondary growth appears in the gland in the groin for often when the primary growth is of small size there is rapid increase in the secondary form.

A Case of Appendicitis.—Dr. ARMSTRONG in exhibiting this specimen, stated that the clinical history was of more than usual interest. The patient, a lady, 46 years of age, a morphinomaniac, gave a history of eight attacks of pain in the lower part of the abdomen. In one of her attacks in November, 1893, she was five or six weeks in bed. Dr. Armstrong saw her for the first time two months ago, when on examination he found in the right side of the pelvis a fairly large mass, hard, painful and tender on pressure. On considering the history of repeated attacks, he advised early removal of the mass. While the patient had this still under consideration, she came and said that she had discharged about a pint of creamy yellow matter from the vagina, then on examination he found that the mass was almost all gone, and therefor came to the conclusion that it had emptied itself in that way. Two weeks ago she complained of abdominal tenderness, and he thinking that she had been taking morphine by mouth was inclined to account for it by the use of that drug. Her temperature, however, rose to 100° , and next day she began to go into a state of collapse. Subsequently the temperature dropped to $95\frac{1}{2}^{\circ}$, and then quite suddenly returned to normal with an accompanying improvement in the pulse. This latter favourable condition continued for some days, until one morning, when on going to the hospital he found her with a low temperature, small weak pulse, pain and extreme tenderness on pressure. Operation was at once

performed. Thinking he had to deal with a tubo-ovarian abscess, he made a median incision, but on going down into the pelvis on the right side he soon reached pus. After working at what he thought was a tube he released it only to find that it was the plexure of the colon which lay to the right of the uterus, just above the Fallopian tube which, together with its ovary, was perfectly normal. The colon was filled with water, and found not to be perforated. Then examining the region of the caecum, the blunt and diseased appendix was found. Such a condition in a woman is very misleading, pointing as it did more to a pus tube than to a purulent appendix, especially as her husband was not above suspicion.

Acute Leukemia.—Dr. STEWART gave the clinical history. The patient, a man, 60 years of age, was admitted into the Royal Victoria Hospital in a condition of high fever and swelling of all the lymphatic glands. These were his chief symptoms during the three weeks prior to his death. There was enlargement of liver and spleen, marked leucocytosis, white to red, varying 1-30 to 1-50. Diagnosis was acute leukemia, but in this connection it was difficult to explain the high pyrexia, that of leukemia being very moderate. The patient died from exhaustion, his condition being quite uninfluenced by treatment.

Dr. ADAMI gave the pathological report. The microscopical examination of the liver showed increased amount of fibrous tissue between individual cells pointing to some chronic disturbance. Sections of the pancreas also showed more fibroid tissue than normal. Cultures from the spleen upon agar-agar and beef broth showed the characteristic development of the streptococcus of suppuration. Dr. Adami stated that at the time of the autopsy he had a slight scratch upon his finger, at the site of which small pustules subsequently developed, from these he had made cultures and found very characteristic streptococcus growth. This led to a more thorough examination of all the organs and enormous numbers of streptococci were found throughout. Emboli formed of the streptococci were found in the marrow of the sternum, in the spleen pulp, filling up the capillaries between the liver cells, in many places in the kidney, in the lymphatic gland, especially those softened glands of the mesentery about the pancreas. They

all stained by Gram's method like the ordinary streptococci and the cultural peculiarities resembled them also. They, however, differed slightly from the ordinary streptococcus of erysipelas and suppuration by growing more freely, the broth in which they grew not being quite so clear as usual, and the size of the chain was rather longer. The inoculation experiments are as yet incomplete. (A full report of this case will appear in a later number.)

Dr. BELL asked for some information as to the man's occupation prior to his illness, for it seemed to him from the clinical and pathological report that the case was one of septic infection.

Dr. GEO. BROWN wished to know whether any ear symptoms were present. The case recalled to his mind one reported in the General Hospital several years ago, in which the only symptom was a septic temperature, and in which a diagnosis of suppurative endocarditis was made. The autopsy, however, revealed suppuration in the lateral sinus.

Dr. GUNN saw the patient when he first came to the hospital and learned from him that he had been working recently cleaning out the sewers. Another important feature in the case was the nature of the leucocytosis. The increase of the white corpuscles finally reached the proportion of 1 in 37, and consisted solely of an increase of the polynuclear leucocytes, the mononuclear variety not being at all increased. This condition of the blood corresponds with septicæmia. Another very interesting point in the case was the peculiarity of the splenic enlargement, which instead of enlarging downwards extended upwards, its area of dulness reaching behind to the middle of the scapula, and being continuous in front with the heart dulness. At the autopsy this condition was explained by the contraction of the left lung, which accordingly permitted the upward extension of the spleen, as being the direction of least resistance.

Typhoid Fever with Double Pneumonia.—Dr. GEO. A. BROWN reported the case. D. O., age 30, complained of headaches, pain in the back and bones, dyspnoea and cough with expectoration of a rusty character. Family history negative. Patient had scarlet fever and measles in childhood and la grippe four years ago and since that time has enjoyed good health.

Present illness began about ten days ago (Sept. 25), with chilliness, headache, pain in the back and bones, and slight pain in the abdomen, followed by diarrhœa. About Oct. 1st, he had a slight hacking cough, with expectoration of a frothy character. Thinking that it was only a cold, he tried to battle it off and remained at work until he was compelled to give it up. On Oct. 4th, I saw patient for the first time: He was in a semi-comatose condition and there was marked signs of prostration. Temp., was 105°; Pulse 120; Resp., 40; pupils were contracted and responded to light. I found it very difficult to wake him and when awake he had difficulty in hearing, and did not understand questions very well.

On examination of the lungs I found sibilant râles all over with rapid and prolonged respiration. At the back in the right inferior scapular region there was dulness, blowing breathing and bronchophony, also some physical signs in inferior axillary region, showing extensive consolidation of the right lower lobe. On left side in left inferior scapular region there was another patch of pneumonia about two inches square.

The abdomen was covered with rose spots. On palpation it was tense, there was tenderness and gurgling in right iliac fossa, spleen was enlarged; dulness extended from eighth rib almost to the crest of the ilium. Urine normal.

For first seven days (Oct. 5th to 12th) of his illness, patient remained in a prostrated condition. There was present a low muttering delirium, picking of the bed clothes and subsultus tendinum. On eleventh and twelfth of October patient was in a semi-comatose condition all the time and could not be aroused when nourishment was given him. There was a cyanotic condition of the lips and finger tips. Urine was examined and no albumen found. Oct. 13th, the delirium ceased, the temperature and pulse dropped and there was profuse sweating. In the pneumonic areas there was a few redux râles.

From Oct. 14th to 21st the physical signs resembled acute miliary tuberculosis, as there were numerous moist râles all over the lungs, more especially in pneumonic portions. There was a hectic flush and profuse sweating towards evening, usually lasting about two hours. There was also frequent coughing, at times followed by muco-purulent expectoration.

About Oct. 22nd, physical signs in lungs cleared up; cough ceased and there was also a few mucous râles in the bases.

The abdominal symptoms at the time were more marked, there was distention and the stools were very fetid.

On Oct. 28th, temp., dropped to normal and patient made a good convalescence. Treatment was milk diet, brandy $\bar{3}$ vi, and Trit. Strychininæ Sulp. gr. $\frac{1}{30}$, 4 g.h., and Trit. Hydrarg Subchlor gr. $\frac{1}{10}$ 2 g.h., while the stools were fetid.

The causation of Inflammation of the Brain—A comparison of authorities on the subject.—Dr. WESLEY MILLS read the following communication :

Owing to some remarks made at a recent meeting of the Society in regard to the relations between the blood vessels and inflammation of the brain I have been led to look into the literature of the subject and now submit the following brief references from writers in English.

Fagge in his Principles and Practice of Medicine says: "Now it is well known that an embolism often sets up inflammatory processes in the parts around the vessel in which it becomes lodged."

Bristowe observes in his Theory and Practice of Medicine: "In a large number of cases encephalitis arises from the influence of some irritating mass as a patch of softening."

"Inflammatory changes occur about the softened areas and when the embolus is derived from an infected focus as in ulcerative endocarditis, there may be suppuration. According to Flint: "If the embolus is infectious it leads to the formation of an abscess."

Ross (Handbook of Diseases of the Nervous System), believes that, "local disease of the brain like thrombosis, embolism, etc., often sets up surrounding inflammation of the brain."

Bartholow (Practice of Medicine), remarks that, "more frequently encephalitis has occurred from infective thrombi."

Osler (Practice of Medicine) writing of thrombosis and embolism holds that "inflammatory changes are common in and about the softened [brain] areas. When the embolus is derived from an infected focus, as in ulcerative endocarditis suppuration may follow."

One of the principles I learned as a student from that great

teacher of Medicine the late Dr. R. P. Howard, was, that in any case of fatal brain disease it was a wise precaution to examine the blood vessels of the brain, and, in fact, to look into the circulatory system generally, especially so in cases of softening, inflammation, etc.

From such an examination of the writings of the leading teachers of Medicine of the present and the immediate past as I have been able to make, it appears that such an advice is still sound. While we should welcome any new light that microbic or other processes may throw on disease, I cannot but believe that the old landmarks have not yet all been swept away.

In a few words the truth in regard to inflammation and suppuration of the brain, seems to be thus: While an inflammation of the brain may arise and go on to suppuration without the blood vessels being especially concerned in a causative way, and while a thrombus or an embolus may not give rise to inflammation, yet on the other hand inflammation and suppuration may follow sooner or later and is almost sure to do so if the thrombus or embolus be due to some infective process near or remote. It follows therefore that the examination of the blood vessels of the brain, both venous and arterial, is a sound procedure in all cases of gross brain lesion.

Dr. ADAMI remarked that he presumed the paper was intended, by Dr. Mills, as an answer to his (Dr. Adami's) statement at the last meeting, that emboli never caused suppuration. He, at the time, understood Dr. Mills to mean that suppurative inflammation of the brain, might be due to an infarct in that organ, that is to say, to the simple blocking of a vessel by some non-infective material. This he regarded, and still regards as impossible. To have suppuration and the formation of an abscess (as there was in the case then being discussed), one must have the presence of a micro-organism. Every metastatic abscess is the result of the carrying to and the blocking of some vessel by micro-organisms, which cause a destruction of tissue, etc., at that point. A simple infarct on the other hand, causes necrosis, and round about the necrosed area, one may get a zone of simple inflammation, but never the formation of pus. The authorities quoted by Dr. Mills, in

his paper, may be divided into two classes. (I). Those who are referring to simple inflammation (II). Those who are referring to suppurative inflammation, and it will be found that they both agree pretty closely with the foregoing views. He pointed out that in giving his description of the brain, he had referred to the atheromatous condition of the vessels.

DR. MILLS admitted that his paper was intended as an answer to Dr. Adami's treatment of his comments on a case discussed at the last meeting. In asking the question that night, he simply wished to know whether the blood vessels of the brain had been examined, as while he did not wish to belittle the importance of the more recent methods of bacteriological research, yet he thought it inadvisable to desert entirely the good old landmarks of pathological investigation, and as such he regarded the condition of the vessels as something never to be overlooked.

The late Dr. Joseph Workman.—DR. GIRDWOOD called the attention of the members to the death of Dr. Joseph Workman, of Toronto, who was an Honorary Member of the Society, the oldest living graduate of McGill University, and was connected by marriage with one of our present most prominent members. He moved—"Resolved, that the members of this Society have heard with deep regret of the death of Dr. Joseph Workman, of Toronto, who was an Honorary Member of the Society, and that they desire to express their high esteem for the late Dr. Workman and their sympathy with the family of their deceased friend and fellow worker; and that a copy of this resolution be forwarded to the representatives of the family."

DR. WESLEY MILLS, although regretting the occasion, had great pleasure in seconding the resolution. He knew Dr. Workman, he had felt the influence of his presence, for good and knew a number of men who had experienced the same. Dr. Workman, in fact, was one of those men who influenced profoundly almost every person with whom they come in contact. He had made some important contributions to our Society, and was for many years a translator of scientific Italian medical work which if he had not translated, would most likely have remained entirely unknown to the majority of the profession in Canada. In this respect he even went to the trouble

of translating an important Italian work on the brain for which he never got a publisher. He was in many ways an extraordinary man, a man with the courage of his convictions. For many years in Ontario he fought the battles of the profession through the press, and we to-day are reaping the fruit of the victories won by this great Nestor over the iniquities of his time. Dr. Mills expressed it as his conviction that, with the exception of the late Dr. Howard, perhaps there was no man in Canada who was so generally respected and admired by his professional brethren, and, indeed, by all who knew him intimately enough to appreciate the nobility of his nature, as was Dr. Workman.

Stated Meeting, May 4th, 1894.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Foreign Body in the Bronchus.—Dr. BELL exhibited a short piece of lead-pencil, with a brass top, out of which the rubber had fallen, that he had recently removed from the lower division of the left bronchus of a child. A week ago last Thursday a little girl eight years of age, while nibbling the end of her lead pencil, was struck on the back of the head by a schoolmate; the pencil slipped from her fingers into her mouth, and being a nervous child, she jumped up, inspired, and drew it into her larynx. A fit of strangulation followed, lasting about fifteen minutes, and nearly proved fatal. A doctor was immediately called in; she recovered sufficiently to walk home, but coughed violently throughout the night. Her family doctor saw her at ten o'clock that night, but as she was then sleeping, he made no examination. The next morning, on calling, he found the left side of her chest collapsed and dull, with no evidence of air entering the lower lobe, and very little the upper lobe of that lung. The cough then had almost ceased, but she complained of great pain, which she vaguely referred to the region of the nipple. Her temperature rose during the day, and in the afternoon had reached as high as 103.5°. She was brought to Montreal that day and when Dr. Bell saw her in the evening, at the Royal Victoria Hospital, her temperature was 104°, respiration 50 to 60 per minute, pulse 140; she was very restless and complained of great pain

in the situation already mentioned. The collapse of the left side was so marked, as to be visible to the naked eye, and auscultation revealed, that absolutely no air was entering the lower lobe, while in the upper, only a very feeble sound without any vesicular murmur, could be heard. His conclusions were, that the piece of pencil had entered the left bronchus, into the lower division of which, it had become impacted so as to completely occlude it, while its end, lying across the orifice of the upper division, partially blocked its lumen as well; that in this position it acted as a bullet valve, which when she coughed permitted the residual air to be expelled, but which upon inspiration, became firmly impacted and prevented the entrance of air to the lower lobe, and allowed very little to the upper. Recognizing the condition as a serious one, Dr. Bell thought it better to postpone the operation until the morning, by which time he could have the assistance of Drs. Stewart and Roddick in consultation. With their concurrence, the next day (Saturday), a low tracheotomy was performed, and the trachea opened below the isthmus of the thyroid. Before attempting the extraction of the foreign body the child was placed in what might be described as an exaggerated Trendelenberg's position, with a pillow beneath the back of the neck, to throw the head back; so that if he succeeded in dislodging the foreign body gravitation would cause it to fall downward towards the wound in the trachea, and thus prevent it from being drawn into the other bronchus. To reach it, an angular forceps, with blades $3\frac{1}{2}$ inches long, and the angle nearly ninety degrees, were used, the angle of which went completely into the wound, and thus permitted the blades to be manipulated with great ease. Having succeeded in grasping it with the forceps, he he dislodged it from its impacted position with a little jerk, but then fearing he might have been mistaken, and have caught hold of a ring of the bronchus instead, he let go the object, for the purpose of satisfying himself further. Immediately, however, there was a gush of pus up through the tracheal wound, which threatened the patient with instant asphyxiation, but, fortunately not having withdrawn the forceps, he passed them down again, and striking the brass end of the pencil, which happened to be uppermost, he immediately withdrew it. All

symptoms of urgency disappeared at once. The next morning on examining the chest air was found entering both lungs freely, a few râles were found in the lower lobe of the left lung anteriorly; but since then these have disappeared, the child appears quite normal, and is only waiting for the closing of the tracheal wound to return to her home.

Dr. JAMES STEWART, had the privilege of seeing the child before, during and after the operation, and felt honoured that he belonged to a profession capable of accomplishing such beneficent results. It was quite clear to any person who witnessed the great distress under which the little patient laboured, that she could have lived but a very few hours. An interesting feature was the change in the physical signs which the plugging gave rise to; percussion over the lower half of the left lung gave a note quite as flat as that met with in pleural effusion, while over the upper half though not so marked, it was still less resonant than normal: On listening over the lower half, nothing at all was heard, while in the upper portion one had tubular breathing. These phenomena are worthy of consideration as illustrating how respiratory sounds in health and disease are produced.

Six Cases of Pyosalpynx.—Dr. A. LAPHORN SMITH, read the reports of the cases. (To appear in a later issue.)

Urinalysis in One Hundred Cases of Ether Anæsthesia.—Dr. GORDON CAMPBELL read a paper on this subject, of which the following is a synopsis:—Specimens were examined of the urine before, during the actual time of, and after the anæsthesia and the occurrence of albumin, sugar and acetone noted and the amount of urea estimated during the actual anæsthesia as compared to the normal. The amount of urine secreted while under ether anæsthesia was found to be within the normal limits, but the amount of urea excreted was largely diminished, averaging only ($\frac{3}{8}$) three eighths of the normal; i. e., at the rate of 177 grains per diem. Both the amounts of urine and of urea varied inversely with the length of anæsthesia. Albumin was found in the urine secreted during anæsthesia in 6 per cent of the cases and in three of these the presence of a sound in the bladder during part of the time was looked on as a possible cause. In no case did the amount of albumin exceed 2 grammes per litre and in every case it disappeared the

following day and was considered to be of vaso-motor origin. Sugar was not found as a product in any of the cases. Acetone was invariably present for two days following anæsthesia and in 64 per cent appeared during the administration. It lasted from 3 to 7 days after.

Dr. BULLER, reminded Dr. Campbell of a case in which he had administered ether to a patient who was in a very advanced condition of saccharine diabetes, and who became dangerously cyanosed during the administration. Noticing that no allusion has been made to any such case in the paper, the speaker wished to know if Dr. Campbell had ever since met with any similar case.

Dr. REED wished to know what test had been used for acetone, also whether the latter was present in sufficient quantity to be recognisable without distillation.

Dr. LAPHORN SMITH declared himself as no friend of ether, but would like to give it its due. He did not think the ether was responsible for the diminished quantity of urine secreted after anæsthesia. The preparatory treatment which is employed in cases of laparotomy would alone have this effect. For some days before the operation a patient is kept on dry food, and purged freely by means of cathartics, thus getting rid of a large quantity of water from the system; the day previous to the operation the patient is not allowed any water to drink; and again some operators prohibited food for 24 hours after the operation. All this must have a very considerable effect in lessening the quantity of urine. Now as to the diminution in the quantity of urea, he ventured to say that this diminution was not confined to the patient, but that both the operator and the anæsthetist would find themselves similarly affected. It must be remembered that urea is oxidized nitrogen, and that during every hour that a person is in a room without much air, or with air deficient in oxygen, the oxidisation of the nitrogen into urea becomes more difficult, and it is often compelled to stop at the uric acid stage. For his own part he has frequently found himself, after a prolonged operation, in a crowded room, to be suffering from soreness or aching in the joints, which he attributed to an excess of uric acid in his blood. Again as to the safety which Dr. Campbell

has administered ether, he thought more credit was due to the anæsthetist than the anæsthetic. A great deal was the result of the use of Clover's Inhaler, but this was an apparatus which every one could not manipulate with success, very few have been as successful with it as Dr. Campbell. By means of it, the quantity of ether administered during a given time is much less than would be required to keep up the same degree of insensibility, were the ether administered by any other means; as a result, therefore, the patient consumes less of the drug per minute or per hour, and consequently runs less risk.

Dr. HINGSTON complimented Dr. Campbell on the spirit of thoroughness with which he had conducted these investigations; and expressed a wish that Dr. C., might undertake a similar series of experiments, with chloroform. To have the same observer study the properties of the two drugs would be much more satisfactory, than two investigators each confining himself to one.

Commenting on the details of the paper, Dr. Hingston took exception to the term "post" being used to designate the period during which the patient was really under the influence of the anæsthetic, and suggested that a better division would be into "ante" "per" and "post," or before, during and after the administration.

Dr. WESLEY MILLS praised very highly Dr. Campbell's paper. He concurred in Dr. Smith's criticism relative to the changes brought about in the urine from excitement etc., as factors which should be taken into consideration when estimating the effects of the anæsthetic on that secretion. In this respect he alluded to the differences which he had frequently noticed in his own urine after lecturing, or when labouring under the strains of examination time, differences which a colleague of his had also observed.

Dr. JAMES BELL, expressed himself as greatly interested in Dr. Campbell's observations. As a routine practice he was accustomed to use ether as an anæsthetic, reserving chloroform for certain conditions where the former was said to be contra-indicated. One of these was in affections of the kidney: He had never been able to see any good reason for this restriction, and a study of Dr. Campbell's cases was not calculated to

remove the doubt. Only six cases of albuminuria appear in this list; in three of which a sound having been passed into the bladder is sufficient in itself to account for albumen in the urine. Relative to the undoubted diminution of urine, and urea following ether anæsthesia, it must be remembered that such phenomena are susceptible of more than one explanation. The length of time during which the anæsthetic had been administered, and the effects of the shock proper to the operation itself have to be taken into account in this respect. At the same time, Dr. Bell, thought it well to remember that one hundred cases were after all a very small number for us to draw any positive conclusions from; to do this, the investigation should be continued, and extended over a great many hundred cases if possible.

Dr. GORDON CAMPBELL, in reply to Dr. Buller, said he remembered well the case referred to and thought that the cyanosis in that case was not due to the ether, but to a spasm of the glottis, because upon introducing a finger into the patient's mouth, and raising the epiglottis, the spasm was relieved. The only other case he had seen with sugar in the urine took the ether normally, although it must be said that here the amount of sugar was very small—a mere trace only.

In answer to Dr. Reed, he said it was his practice always to distil the urine before testing, he tried once or twice testing the specimen direct, but did not meet with much success, and thought it would not be easy to detect in that way.

With regard to Dr. Bell's remarks, two cases showed pus in the urine before the operation, and as far as they could judge by the eye, and by microscope, the condition afterwards remained the same. He did not mention these, as two cases he considered proved nothing.

As to the time occupied in the operations, Dr. Campbell explained that most of these cases had been drawn from his experience in Dr. Gardner's Private Hospital, where, having no fear of the anæsthetic, they were accustomed to give the ether in the patient's room, and keep her under the influence of it until she returned there; in this way the length of time occupied by anæsthesia might sometimes exceed by an hour the time of the operation.

Dr. W. M. GARDNER in reply to Dr. Smith who had called attention to the importance of the preparatory treatment in laparotomy in influencing the diminution in the quantity of the urine, said that his patients had very little preliminary treatment. His operations are performed at 9 a.m.; a dose of castor oil the night before and at 7 a.m., they have a cup of beef tea. This constitutes all their preparatory treatment.

Exophthalmic Goitre.—Dr. A. W. HALDIMAND, gave the clinical history of a case which came under his observation in the Metropolitan Dispensary. The symptoms were exophthalmos and goitre which first appeared six weeks ago. There was no tachycardia, which is peculiar since authorities seem agreed in considering this an ever present symptom. Neither were there other circulatory symptoms, such as throbbing of the carotids, or flushing of the face. There was nothing in the family, or personal history of the patient to account for the disease. The patient was a barber by trade, 27 years of age, and with the exception of a few attacks of gonorrhœa, never a day sick in his life. Auscultation revealed a slight systolic murmur, and his pulse was found to be somewhat irritable. The treatment employed was eight minims of the Tinct. Belladonnæ three times daily, under which the goitre rapidly diminished. The interesting features in the case, and those which he thought warranted his bringing it before the society, were the acuteness of the onset, and the absence of tachycardia.

Selections.

Tubercular Meningitis from Milk.—An apparently well authenticated case of tubercular meningitis, the direct result of drinking milk from a tuberculous cow, is reported from Yonkers. The patient, the four-year-old son of Mr. Wm. A. Harper, of the publishing house of Harper & Brothers, who married a grand-daughter of the late Rev. Henry Ward Beecher, gave no sign of ill-health until the 1st of March, when the family physician was called in. The symptoms presented were those of tubercular meningitis, and later the diagnosis of this disease was confirmed by Dr. M. A. Starr, Professor of Diseases of the Nervous System in the College of Physicians and Surgeons of New York, who was called in consultation. The child died March 27th. The milk used by the family was supplied by two fine Alderney cows which were purchased about a year ago, and which had always seemed to be perfectly healthy. After the child's death, however, the Koch lymph test was applied by Veterinary Surgeon J. B. Lamkin, and the presence of tuberculosis was indicated in both animals by the rise of temperature following the injection. A careful examination also revealed evidences of tuberculosis in the udder of one of them; and it is claimed by Dr. Brush and other authorities that the milk of a tuberculous animal cannot convey the disease unless the mammary gland is affected. It is stated that several weeks ago Dr. Lamkin reported to the Board of Health that he had found tuberculosis among the cattle of Yonkers.—*Boston Medical and Surgical Journal.*

Legal Requirements for the Practice of Medicine in the United States.—So many changes have been made in the legislation regulating the practice of medicine in this country during the past three years, that the Illinois State Board of Health will include, in its forthcoming Report on Medical Education, the text of all laws on this subject in force at the beginning of the present year in the several States and Territories of the United States, and in the provinces of the Dominion of Canada. From this forthcoming Report, through the courtesy of the Secretary of the Board, Dr. J. W. Scott, some data have been gathered

which will be of interest to the spring crop of new graduates, and to medical men generally.

Of the six New England States, Maine, Massachusetts, New Hampshire and Rhode Island have no legal requirements for the practice of medicine. Connecticut has adopted a medical practice act which went into effect Oct. 1, 1863, and in Vermont the law requires the registry of a diploma indorsed by a Board of Medical Censors or of a certificate of satisfactory examination by one of these Boards.

Exclusive of the four States first named, the other States and Territories may be roughly grouped into the following three classes:

In Alabama, Arkansas, Florida, Maryland, Minnesota, Mississippi, New Jersey, New York (act of May 9, 1893), North Carolina, North Dakota, Pennsylvania (after March 1, 1894), South Dakota, Texas, Utah, Virginia and Washington, the diploma confers no right to practice and has no legal value, except, in some cases, to give its possessor standing before an examining board. The right to practice in each of these sixteen States is determined by individual examination before boards of examiners created by law.

In California, Colorado, Connecticut (since October, 1893), Delaware, Illinois, Iowa, Kentucky, Louisiana, Missouri, Montana, Nebraska, New Mexico, Oklahoma, Oregon, Tennessee, Vermont and West Virginia, the diploma is subject to supervision of some designated body vested by law with authority to determine its validity as evidence of its possessor's qualifications for the practice of medicine. Failing the possession of such a recognized diploma, the right to practice may be acquired by passing a satisfactory examination.

In Arizona, Georgia, Idaho, Indiana, Kansas, Michigan, Nevada, Ohio, South Carolina (since the repeal of the Act of 1888), Wisconsin and Wyoming, the presentation of any kind of a diploma—provided only that it be from a "chartered" medical institution—is the sufficient warrant in law for country clerks, clerks of courts, registrars of deeds and similarly qualified judges of medical fitness to admit to practice.

Following is a résumé of the legal requirements for practice

in each State and Territory of the United States, in force Jan. 1, 1894 :

Alabama.—A certificate of successful examination by the State (or a county) Board of Medical Examiners. Diplomas confer no right to practice.

Arizona.—Registry, with a county recorder, of an unrevoked uncanceled "diploma regularly issued by a medical college properly and lawfully organized under the laws of the State wherein said college shall be located."

Arkansas.—A certificate of successful examination by the State (or a county) Board of Medical Examiners. Diplomas confer no right to practice.

California.—A certificate issued on the diploma of a college in good standing or upon a successful examination by one of the State Boards of Medical Examiners—regular, homeopathic or eclectic.

Colorado.—Similar to California, except that there is but one State Board of Medical Examiners.

Connecticut.—A certificate of registration of the diploma of a college "recognized as reputable by one of the chartered medical societies of the State," regular, homeopathic, eclectic ; or a certificate of satisfactory examination by a committee appointed for the purpose by the State Board of Health.

Delaware.—A certificate based upon the registration of a diploma from "a respectable medical college," or upon "a full and impartial examination by the State Board of Medical Examiners."

District of Columbia.—Nominally the indorsement of a diploma, or an examination, by a committee of the District Medical Society ; practically no requirement.

Florida.—A certificate of satisfactory examination by the State (or a district) Board of Medical Examiners. Diplomas confer no right to practice.

Georgia.—The registration of a diploma from any "incorporated medical college, medical school or university." The clerks of the Superior Courts are the sole judges of the diploma as evidence of fitness for medical practice.

Idaho.—The record of a diploma at a county seat.

Illinois.—A certificate issued by the State Board of Health

upon the diploma of a legally chartered medical institution in good standing as determined by the Board, or upon a satisfactory examination by the Board.

Indiana.—The registration, in a county clerk's office, of a diploma "from some reputable medical college."

Indian Territory.—*a* Cherokee Nation: An examination by the Board of Medical Examiners; *d*. Choctaw Nation: A certificate by the Board of Medical Examiners; *c*. Creek Nation: Payment of \$25 annually as a license fee.

Iowa.—Similar to Illinois.

Kansas.—The registry of a diploma from "some respectable school of medicine," or of a certificate of qualification from some State or county medical society.

Kentucky.—A certificate from the State Board of Health issued upon the "diploma of a reputable and legally chartered medical college.

Louisiana.—The record of a diploma from "any medical institution of credit and respectability" after indorsement by the State Board of Health.

Maine.—No legal requirement. In 1887 an act to regulate the practice of medicine was passed by the Legislature but was vetoed by the Governor.

Maryland.—A certificate issued upon a satisfactory examination by the State Board of Medical Examiners. Diplomas confer no right to practice.

Massachusetts.—No legal requirement.

Minnesota.—Similar to Maryland.

Mississippi.—Similar to Maryland—except that the examination is made and the certificate issued by the State Board of Health.

Missouri.—Similar to Illinois.

Montana.—Ten years of practice; a certificate upon the diploma of a college "in good standing," or upon an examination by the State Board of Medical Examiners.

Nebraska.—A certificate issued by the State Board of Health upon the diploma of "a legally chartered medical school or college in good standing," as defined in Section 8 of the Act of July, 1891.

Nevada.—The record of a diploma from "some regularly chartered medical school."

New Hampshire.—No legal requirement.

New Jersey.—A license issued upon a successful examination by the State Board of Medical Examiners. Diplomas confer no right to practice.

New Mexico.—A certificate upon the diploma of a legally chartered medical institution in good standing, or an examination by the Territorial Board of Medical Examiners.

New York.—A license issued upon a successful examination by one of the State Boards of medical Examiners—regular, homeopathic, eclectic. Diplomas confer no right to practice.

North Carolina.—A license issued upon a successful examination by the State Board of Medical Examiners. Diplomas confer no right to practice.

North Dakota.—Similar to North Carolina.

Ohio.—The diploma of a respectable school of medicine, or a certificate of qualification from a State or county medical society.

Oklahoma.—A license issued by the Superintendent of Public Health upon a medical diploma or after examination.

Oregon.—A certificate on the diploma of a college "in good standing," or after examination by the State Board of Medical Examiners.

Pennsylvania.—A license issued after examination before one of the State Boards of Medical Examiners: Act of May 18, 1893; takes effect March 1, 1894. Diplomas will thereafter confer no right to practice.

Rhode Island.—No legal requirement.

South Carolina.—A certificate of verification of the diploma of a reputable medical college. An Act of December 24, 1890, abolished the State Board of Medical Examiners created by the Act of 1888 and under which the diploma conferred no right to practice.

South Dakota.—A license issued by the State Board of Health after examination. Diplomas confer no right to practice.

Tennessee.—A license on the diploma of a college "in good standing," or after examination by the State Board of Medical Examiners.

Texas.—A license issued after examination by a District

Board of Medical Examiners. Diplomas confer no right to practice.

Utah.—A license issued by the Territorial Board of Medical Examiners after examination. Diplomas confer no right to practice.

Vermont.—The registry of a diploma indorsed by one of the Boards of Medical Censors, or a certificate of examination by one of the Boards.

Virginia.—A license issued after examination by the State Board of Medical Examiners. Diplomas confer no right to practice.

Washington.—Similar to Virginia.

West Virginia.—A license on the diploma of a reputable college, or after examination by the State Board of Health.

Wisconsin.—The indorsement of a medical diploma by the censors of either of the State or County medical societies.

Wyoming.—The record of a diploma with a registrar of deeds.—*J. A. M. A.*

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PROFESSIONAL SECRECY AMONG MEDICAL MEN.

Professor Brouardel of Paris, who was already the author of a work on this subject, has recently published, under the title of *Le Secret Médical*, some lectures in which his views are further explained and illustrated.*

The fact that we have no English equivalent for the expression *Secret Médical*, indicates that what Prof. Brouardel refers to as "one of the most beautiful and sacred of the prerogatives of our profession," has never received general recognition among the English. We do not, in fact, distinguish any form or degree of secrecy peculiarly medical in nature. The oath of secrecy formerly exacted by the Faculty of Medicine of Paris "*Ægrorum arcana visa, audita, intellecta eliminat nemo*," is far more stringent than the "*non sine gravi causa vulgaturum*" which is the expression adopted by most of our own medical colleges. The French criminal law (article 378) provides a penalty of 100 to 500 francs for medical men, apothecaries, or midwives who reveal secrets confided to them in the course of their professional duties, unless obliged by the law to do so.

The interpretation of this statute by physicians has been different from that by the legal authorities, the latter maintaining that medical men are not bound to secrecy if, for instance, when attending a woman for a threatened miscarriage, proof of an attempted abortion are incidentally discovered without the patient having confidentially informed them of the fact. To

* *Annales d'Hygiène Publique*, Avril, 1893, p. 239.

this view, however, the members of the medical profession in France are strongly opposed. In 1853, under circumstances of this nature, the physician refused to reply in court, and was sustained in so doing by the judge. In 1885, when Dr. Watelet, who was unjustly prosecuted in a matter which involved his professional reputation, felt himself at liberty to publish a letter giving the details of a consultation with Prof. Fournier and narrating facts of a private nature in regard to the patient, he was fined 100 francs for violation of professional secrecy, and this judgment was confirmed by the Court of Appeal.

Prof. Brouardel, in bringing examples to support this obligation of secrecy, mentions these cases (1) where the malady or the circumstances of the death are of such a private or degrading nature that the interests of the patient would suffer if it were revealed; (2) in regard to diseases regarded as hereditary such as tuberculosis, epilepsy, or insanity where the knowledge of their existence might form a bar to marriage; and (3) in diseases popularly supposed to cause death more or less rapidly, and where an unfavourable prognosis might cause alarm.

The duty of preserving secrecy when the death of well-known and respected citizens occur unexpected in houses of ill-fame, would seem to us a personal rather than a professional question.

Whether the greatest good to the greatest number is attainable by the unrestricted entrance of epileptics, etc., into the bonds of matrimony, under a false pretence of being in perfect health, is not a question which is allowed to be taken into account by the upholders of medical secrecy, and no doubt it is very convenient for physicians to be able to follow some hard and fast rule. With regard to the third class of cases regarded as enjoining secrecy, M. Brouardel's arguments do not appear to be very strong. He instances a case where a person suffering from aortic incompetency, was not warned of his serious condition, but allowed to pursue his ordinary mode of life and assured that his health was excellent. The man lived for 16 years, and died of acute pneumonia. On the other hand, it is quite likely that if he had been informed of his condition

and told at the same time that his life would not probably be endangered by it, the results might have been equally good. The fact that it is possible to frighten a patient of this sort into a hypochondrical condition hardly appears to form grounds for a universal medical secrecy.

Two other examples which are given in support of *Le Secret Médical* strike us as being particularly weak. One is the danger of informing a phthisical patient of his condition, because the public will then consider him doomed to certain death within a short time. On this head it is, we think, the general experience that it is all but impossible to convince a consumptive that he is ill really, and for each death hastened by fear in this disease, we find a dozen brought on because, after marked improvement, the patient insisted upon returning to work before the cure had had time to become complete.

The other was illustrated by a case where an individual, upon being informed that his brother was affected with general paresis and would probably die within three years, insured that brother's life for \$20,000 and obtained the amount of the policy. Here the error was not violation of medical secrecy, but deliberate fraud on the part of the beneficiary, and want of care or skill on the part of the medical examiner for the insurance company. Suppose the physician had been called upon to act as a referee by the insurance company would his obligations of secrecy oblige him to stand by and see them swindled?

In the case of a clandestine confinement, M. Brouardel advises reporting the birth and stating the father and mother as unknown. In the case of duels, he considers the obligations of secrecy as binding only when the meeting is clandestine.

Incidentally, the case of Cornelius Herz is referred to. Here M. Brouardel, with other experts, was called upon to decide whether the patient was in a condition to go to London and be cross-examined. A statement was made to the effect that his removal would be extremely dangerous, but the experts, "although the case was not one calling for medical secrecy," refrained from publishing the details of the case, because they "knew that Herz read the newspapers and thought it humane

not to aggravate his condition by detailing the particulars of his case." For this secrecy the experts were made the recipients of much adverse criticism, in spite of which they did not reveal anything until the condition of the patient improved. Here this heroic reticence appears to have been rather uncalled for, as the statement that a man was dangerously ill and likely to die at any moment, would hardly be made much worse by a little circumstantial detail, and it would seem as if a full and satisfactory statement, by putting an end to idle rumours and enabling the patient to obtain more rest might have been the best thing to be done.

In France this medical secrecy is just as absolute as the secrecy of the confessional. For instance, in a case which recently occurred where a runaway convict who had been taken ill and treated in a hospital, was recaptured after leaving the institution, the medical superintendent refused to allow the police to look at the admission book or to have it produced in court, the hospital being regarded as a sanctuary for evil doers, if in poor health. To entertain these lofty and ennobling sentiments is a joy which does not fall to the lot of medical men elsewhere than in France. Here, if when the coster had finished jumping on his mother, he were to go to hospital for a week to recover from the effects of his spree, the chances are that the superintendent would be only too glad to give him in charge of the police.

While the above was in print, we noticed the following item in one of the daily papers. As it has excited no comment from the medical profession of this country, we may assume that medical traditions have not been violated in this case. We omit the names, which were, of course, given in full.

S——, June 4.—On Saturday a verdict of infanticide was given by the coroner's jury against a Miss T——, aged 20, who was a servant in a family in S——. She being very sick, Dr. B—— was sent for. He discovered that her illness was the result of an *accouchement* a few days previous. To his enquiries about the child he got evasive replies, which aroused his suspicions. He notified the police. Search was made and

the child was found dead. Saturday afternoon the doctor held a post-mortem examination and an inquest, when it was discovered that the child bore marks of violence about its throat, as though it had been strangled. There were also evidences that the child must have been living at the time of its birth. As soon as the girl's health will permit, she will be committed to gaol.

Professional secrecy in medical matters, controlled by common sense, is an excellent thing, and we think that as matters stand English practitioners do not, as a class, indulge in unnecessary gossip any more than do their French confreres, but in this fantastic *Secret Médical* we rather suspect that the French profession have rather too much of a good thing, and that the secrecy is more likely to be used as a cloak for ignorance than for any more noble purpose. It is instructive to note that Prof. Brouardel takes care to explain that there is nothing in the nature or circumstances of contagious diseases which enjoins secrecy. He claims that by relaxing secrecy in the matter of epidemic diseases the annual mortality in France can be diminished by 40,000, and we think if, by relaxing it a little more, the mortality could be reduced still further, that society in general would be the gainer.

ST. MARGARET'S HOME FOR INCURABLES.

Among the many charitable institutions of Montreal, one recently opened is the new Home for Incurables, which is specially noticeable as being the only one of its kind in the city. The work was begun in a small way nine years ago by the Sisters of S. Margaret, with a very few patients, and has been quietly going on though gradually increasing in numbers. As the Home received cases which were not eligible for any other hospital or home in the city, it became better known, and applicants able to pay more or less for their board and care were received, though free patients have always been in the majority. The hopelessness of such cases appeals largely to the sympathy of every one, and the knowledge that there will be no ultimate

recovery in any case would often be depressing to the workers were it not for the kind assistance and encouraging words given by the many friends of the Home.

The greatest need of the Home was that of a *permanent* building which had necessarily changed its location several times in a few years, but a short time ago the Hon. G. A. Drummond (who had previously kindly aided the sisters) purchased the estate of the late W. Notman, Esq., 557 Sherbrooke Street, for the use of the Incurables. The property extends from Sherbrooke to Milton street, with an extensive garden in the rear. This house has not been much changed excepting to be thoroughly repaired, but a corridor, 40 feet long and two stories in height, with a gallery on the top, has been built, which leads from it to the large new building which has been erected in the garden. This new house, extending 50 feet on both sides of the corridor, is of red brick, four stories in height, the centre running up to five stories. In the basement, which has a fine concrete floor, are to be found the kitchen, pantries, laundry, furnace room, coal cellar, and two rooms for servants' use. The staircase is in the centre of the building and is wholly fire-proof, each landing leading to a gallery at the back overlooking the garden. On the first and second floors are double and single rooms on each side of the long passage, nurses' sleeping rooms, ward kitchen, and two bath rooms, with a sitting room at the end with an oriel window. Two large wards are on the third floor with ten beds in each, and over that again two smaller rooms for the accommodation of nurses and a trunk and linen room. The house is lighted throughout with electricity. The appearance of the walls is bright and attractive, being of terra cotta colour with a jute dado of blue. Handsome engravings adorn the walls of the rooms and corridors, and nothing has been omitted that would in any way minister to the comfort of the patients or to the convenience of the workers.

Hitherto the sisters have been obliged to confine the work to the care of women only, but they now intend to receive male patients as well. All incurable cases will be admitted (excepting those of insanity or epilepsy) regardless of creed or nationality.

INFANTICIDE IN MONTREAL.

During the past month attention has been called by the daily press to the frequency of infanticide in Montreal. What is most striking is that, although a number of verdicts of this nature have been rendered during the past year, in no single instance have the police succeeded in finding any clue to the guilty parties, so that as yet no charge has been brought. The reasons for this are not far to seek ; a police force and detective force which seem to be capable of very little that lies out of their daily round of arresting drunkards and visiting second-hand shops ; a system of administration of justice which does not sanction any investigation into cases where the criminal has not been obliging enough to reveal his identity ; a system of registration by which nothing is heard of the birth of a child until after its death ; all combine to allow the perpetrators of infanticide to remain unknown and unpunished.

The remedy would seem to lie in making the registration of births compulsory, and in making it somebody's business to investigate these cases. Whether the cases are investigated by the police, the coroner, or the public prosecutor, appears to be a minor matter, compared with the necessity of an investigation of some sort being made.

In Paris, where there is a law compelling the declaration of all births within three days, for every ten cases of infanticide there are on the average six trials and four convictions. Had Montreal a similar system several convictions for this crime should take place every year, whereas not one has been obtained in the past fifteen years. We hope that all persons who have opposed the introduction of the civil registration of births are prepared to shoulder the responsibility for the crime which they thereby connive at.

The city health department has established a steam disinfection station in connection with the Moreau street civic hospital. The disinfecting apparatus now ready for use, one of the Geneste-Hirschler make, is considered an efficient form, although no conclusive tests have yet been carried out with this individ-

ual machine. We trust that a properly trained disinfecting staff, such as exists in New York, will be organized without delay, as no disinfecting apparatus, however excellent, can make itself useful without human aid, and until this is provided for by the city, the public health of Montreal will not be materially benefited. The public should be taught that disinfection is not beneficial in times of great epidemics only.

It is a matter of congratulation that Canada has so far escaped the danger to which we are exposed by the presence of small-pox in many large cities of the United States. We trust that this may continue to be the case, and are glad to see that extra precautions are being taken by both federal, provincial and local sanitary authorities to avoid the importation of cases, and to carry out vaccination on an extensive scale. We are not sufficiently well vaccinated to let quarantine regulations be neglected, and it is chiefly upon detection and isolation of the first case imported that the health of the country depends. As far as we can learn the results of vaccination by the lymph supplied by the Provincial vaccine farm, have been very satisfactory.

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