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## "THE NEUROTIC": A CHARACTER STUDY IN MEDICINE.

BY

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A famous French philosopher is said to have once made the remark that of all mortals the Doctor and the Priest knew man least; that is, in his entirety, for the former only studied the body, and the latter merely the soul. In saying this, he may have had in mind Pope's words in his essay on man—that "all are but parts of one stupendous whole, whose body nature is, and God the soul;" and though at times "philosophy will clip an angel's wings," this French writer has expressed, in an exaggerated way, the tendency in medicine to-day to look upon those seeking its relief as illustrating so many clinical signs or so much anatomic pathology—a beautiful specimen, if you will—and to overlook that which disappears before the post-mortem table is reached, and which can never be studied as microscopical sections—the character of the individual.

Let us, as coming medical men, study our patients as individuals and not as mere cases. No doubt hospital practice, from its very nature and taken in conjunction with the onward march of pathology, render us prone to fall into this frame of mind. But it must be remembered that out in the world we will have to face intelligent individuals, not only as doctor to patient, but as man to man. Therefore would I plead for a little more study of character in medicine, and it is bound to prove an intensely interesting one, for has not Emerson said that "character is nature in the highest form," and just as daylight can be seen through very small holes, so little things will illustrate a person's character.

But, fortunately for our higher development as physicians, there are certain affections of mankind for which our powers of advice, diagnosis and treatment are called into requisition which do not appear to have any definite pathological basis, in which we cannot peer into our patient's body, as it were, and define the exact pathological lesion which may be present—affections, I say, which appear more of the nature of individual traits, and the essential basis of which would seem to depend on variations in that wonderful self, ego—the almost ethereal part of what Pope

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Read before McGill Medical Society.

designates as the "stupendous whole," and as an illustration of these more or less psychic studies I wish to bring before you this evening a type of individual who is known as "the neurotic," in which, as Dr. Weir Mitchell states, we must never lose sight at any time of the character of the patient.

Neurotic, as you know, means nervous, and is derived from the Greek *νευρωσις*, French *névrotique*, but I wish to use it in its broadest sense, as implying an individual who presents what Osler terms "an ill-defined, motley group of symptoms," which are manifestations of a morbid action on the part of the nervous system over and above the indications of simple inefficiency. The condition has been referred to as general nervousness, nervous exhaustion and neurasthenia, and the prefixes cerebral, spinal, cardiac, and gastric, have been employed to denote special localized forms. I shall dwell upon general nervousness as a whole, and more especially with the intellectual phenomena connected therewith, and as we must first have our patient, I cannot do better than use Dr. Clifford Albutt's own words in introducing to you a common type of the intellectual neurotic: "He enters your room with a brisk step and a quick, observant eye, you see a slightly built, meagre man, of sallow complexion, or if coloured, the colour painted high upon the cheek bone. The cheeks and temples are hollow, and the temporal arteries are visible under the lean skin, which often shows tanned markings, deepened during attacks of pain; the hair is straight, fine and sparse upon the scalp; the features are sharp, often prominent; the lips thin, and the skin dry; and some remnants of eczema may be seen about the chin or ears. The bodily frame is lightly and often finely built, the bony fingers and wrists and the visible sinews and radials betraying the absence of fat. Here and there, in later life, a knotty knuckle will tell of gouty parentage. The pulse, when most tranquil, usually ranges between 70 and 80, and accelerates on the least excitement. The clavicles and ribs in like manner are prominent, and the heart's apex may be seen to beat sharply before the eye; its systole to the ear is likewise short and sharp, and the second sound very audible over a wide area. The limbs are small, but often very sinewy; such persons are as active as birds, and the absence of fat in their muscles often gives to these, in states of health, the quality of hardness under the hand. Their conversation, again, is lively and voluble, often keen and brilliant, but impressionable rather than imaginative; you may generally notice in them, too, some little blinking, twitching, or tattooing trick which quickens as thoughts and words come faster. His companions will tell you that he is subject to great fluctuations of the animal spirit; gay, even fascinating in society; brisk, orderly,

and thorough in business; but at home dejected or fretful. He is a small eater, a light sleeper, and a warm worker. These persons are the heirs of every true neurosis, from insanity to toothache; and, on the whole, when we consider the infinite perturbations of intermarriage, it is surprising how true they run, or how clearly you may detect the neurotic strain in mixed descendants."

As far back as 1875, Dr. Weir Mitchell's attention was drawn to the large number of cases at his Philadelphia clinic for Nervous Diseases, which had been set down as general nervousness, and, on further investigation he found, to his surprise, that a very large number of these were men. Up to this time "this striking, this annoying, this disabling condition, had rarely been delineated in the books, or, if spoken of at all, it was as if it were entirely the sad prerogative of woman."

The prominent peculiarity of general nervousness lies in over-excitability: "A healthy organism should respond to calls upon it with an elasticity like that with which the cushion of a billiard table responds to the blow of the ball." But the neurotic patient is too easily moved, too readily excited. "The strong man becomes like the average woman, the woman like the unschooled child, and the symptoms for the most part are not utterly abnormal, but are exaggerations of normal conditions. Many of the characteristics exhibited by the nervous man on the slightest provocation are seen in the normal man at times on rare occasions, under exposure to unusual emotion. A nervous man receives a telegram; he becomes pale, his head throbs, and he opens the envelope with a trembling hand. It proves to be a message of no moment, but the effect lasts for an hour. In George Elliot's words, in her wonderful character study 'Middlemarch,' 'the frame becomes as dangerously responsive as a bit of finest Venetian crystal.'

With the tendency to be easily moved there is also a certain apprehension which applies both to the possible effects of outside influences and to the symptoms of the patient himself. What he feels he exaggerates, and he is alarmed by what he feels; knowing, also, how certain agencies affect him, he dreads them, and thus learns to shun his fellows, and so to avoid the incidents which contact with men bring about. Who has not remarked the very bashful youth or man? Watch him, say as he enters a drawing room, and observe the constrained and anxious look which his features assume, as he imagines himself the centre of everybody's gaze. The bashful man is nearly always neurotic, with his egotistic or self-distrustful ideas.

"In all such men anxiety, fear, and embarrassment, are prone to occasion some disturbances in the sphere of motor activities, which are,

to begin with, never in such cases quite what they should be. Thus in acquired nervousness, the hand is apt to become tremulous, and under emotion of any kind this may increase, so that when conscious of being observed it becomes impossible even to sign the name."

In some cases the mental or emotional impression disturbs the vasomotor system, and we have spasm or dilatation of vessels, violent arterial throbbing, and excited cardiac action. The throbbing aorta is a characteristic symptom in some cases, and this "preternatural pulsation in the epigastrium" of Allan Burns may, as Osler says, be so forcible as to suggest an abdominal aneurism.

Often, too, the face will have a pinched expression, owing to the contraction of the peripheral vessels, and the accompanying facial spasticity will convey the subjective sensation that when he endeavours to smile he is making a rather sardonic attempt at it—the smile that won't come on, so to speak.

How the extreme of nervousness acts on the battlefield is well known. Sometimes the like happens in acquired nervousness, and emotion provokes urination or motion of the bowels. Alas, who but can appreciate what must be the feelings of the poor neurotics when the guardian angel of all normal individuals, the sphincters, desert them, for "who is there that has not felt a kind of competitive struggle, an intestinal warfare, so to speak, going on within himself, fearing the issue, and has not been thankful for the result, and full of gratitude of the little indomitable sphincter, which has averted the catastrophe."

Dr. Weir Mitchell has seen more than one nervous man who, on leaving home in the morning, would be turned back again and again to make water, and, as he states, Mr. Carpenter has long since called attention to the fact that when we watch our automatic movements, and try to make them voluntary, we at once make them difficult. Then, too, owing to this habit of watching their own physiology, as well as the hyperæsthesia which is often present, and worrying about themselves in general, these individuals acquire that morbid frame of mind which is apt to make life more miserable than any other—that of the disease fancier, and Dr. Crothers, of N. Y., even goes as far as to define neurotic diathesis as meaning a tendency to seek relief from every discomfort and pain. Here, in case you all have not read it, I cannot help repeating Jerome's lively description in this regard, contained in his "Three Men in a Boat," which stripped of its facetious vein, is only too true in many instances:

"It is a most extraordinary thing, but I never read a patent medicine advertisement without being impelled to the conclusion that I am suf-

fering from the particular disease dealt with in its most virulent form. The diagnosis seems in every case to correspond exactly with all the sensations that I have ever felt.

“I remember going to the British museum one day to read up the treatment for some slight ailment of which I had a touch—hay fever, I fancy it was. I got down the book, and read all I came to read; and then, in an unthinking moment, I idly turned the leaves, and began to indolently study diseases generally. I forget which was the first distemper I plunged into—some fearful, devastating scourge I know, and before I had glanced half down the list of ‘premonitory symptoms,’ it was borne in upon me that I had fairly got it.

“I sat for awhile, frozen with horror; and then, in the listlessness of despair, I again turned over the pages. I came to typhoid fever—read the symptoms—discovered that I had typhoid fever, must have had it for months—without knowing it—wondered what else I had got; turned up St. Vitus’ dance—found, as I expected, that I had that too—began to get interested in my case, and determined to sift it to the bottom, and so started alphabetically—read up ague, and learned that I was sickening for it, and that the acute stage would commence in about another fortnight. Bright’s disease, I was relieved to find, I had only in a modified form, and, so far as that was concerned, I might live for years. Cholera I had, with severe complications; and diphtheria I seemed to have been born with. I plodded conscientiously through the twenty-six letters, and the only malady I could conclude I had not got was house-maid’s knee.

“I had walked into that reading-room a happy, healthy man. I crawled out a decrepit wreck.”

But the most lamentable feature about the neurotic patient is the insomnia, and it is the one which makes the condition so difficult to overcome. For let a man have his proper sleep, and there is very little to fear as far as neurasthenia is concerned. The neurotic will faithfully curl himself up in bed in regular animal fashion, trying to persuade himself that he is going to drop off to sleep, and then the fight starts. Events of the day will begin to pass through his brain, with more or less rapidity, till the day’s events become the week’s, and the week’s month’s, and perhaps the months years, all succeeding each other in panoramic fashion. Time and again will he try to banish them, but they are almost as persistent as the shades which appeared to King Richard III in the darkness of Bosworth Field; and he will change from one side to another in a vain endeavour to coax sleep. Well might such a man, if he be a reader of Shakespeare, voice his plaint in that poet’s words—

“Sleep! O gentle sleep!

Nature's soft nurse, how have I frightened thee,  
That thou no more wilt weigh my eyelids down,  
And steep my senses in forgetfulness?”

Perhaps after hours of such sensations he will fall wearily to sleep, only to be subject to distressing dreams, especially concerning things which may have been impressed upon his mind during the day or evening. This difficulty in getting to sleep has not been sufficiently dwelt upon, and these patients will often dread the thought of sleep, because they realize that to them it is a forced process, which it should never be.

The neurotic is susceptible to rapid fatigue, especially of the muscular system, and the sensory disturbances in this connexion are varied and sometimes striking. There is no more weary man at times than the neurotic, and he makes constant complaint of feeling “tired” or never “rested.”

The hyperæsthesia is striking because it is so completely subjective, and indeed it will be found all through that the symptoms complained of will be totally out of proportion to what a painstaking examination reveals, and must, therefore, proceed from subjective pathological sensations, but, nevertheless, they cause the patient enough trouble and discomfort to make him lose his happiness for a considerable period of his life.

From what I have said, you will understand that the neurotic is not likely to be one of those individuals popularly termed “one of the boys,” for there is present in him a sense of nervous weakness and effort which gives rise to self-consciousness and self-distrust, and finally, to a suspiciousness towards others, and to a vague feeling of isolation and dread. This type of man might be well misunderstood (and he himself will be the first to imagine it), and his aloofness readily taken for self-conceit, which is seldom present in him, for he knows himself but too well. His temperament is essentially mobile, and he is usually sensitive, and while he may be talented, he rarely has the robustness and endurance necessary for great success.

I might go on and tell you of the numbness and heaviness of the head experienced by such men—of the ringing and buzzing in the ears, of the absent-mindedness, but I think I have mentioned sufficient symptoms to show that life, at least on this side of the Styx, is made miserable, and to indicate that the neurotic is unequal to the ordinary tasks of a fairly healthy person, and will content myself with illustrating the case of a neurotic artist in Corelli's “Romance of Two Worlds,” as well as

one or two of Doctor Weir Mitchell's own cases, which I think show how the subjective sensations dominate the cases:

"In the winter of 1884, I was afflicted by a series of nervous ailments, brought on by overwork and overworry. Chief among these was a protracted and terrible insomnia, accompanied by the utmost depression of the spirits, and anxiety of mind. I became filled with the gloomiest anticipations of evil, and my system was strung up by slow degrees to such a high tension of physical and mental excitement, that the quietest and most soothing of friendly voices had no other effect upon me than to jar and irritate. Work was impossible; music, my one passion, intolerable; books became wearisome to my sight; and even a short walk in the open air brought with it such lassitude and exhaustion, that I soon grew to dislike the very thought of moving out of doors.

"But it was at night that the terrors of my condition manifested themselves. Then sleep forsook my eyes; a dull throbbing weight of pain encircled my head like a crown of thorns; nervous terrors shook me from head to foot; fragments of my own musical compositions hummed in my ears with wearying persistence—fragments that always left me in a state of distressed conjecture; for I never could remember how they ended, and I puzzled myself vainly over crotchets and quavers that never would consent to arrange themselves in any sort of finale."

The above, taken from a more or less subjective standpoint, might be said to represent, fairly typically, that type of neurotic to whom I would apply the term intensely intellectual, having as its etiological factor a too close application to mental work.

The following, from Mitchell's series, point out the effect which certain factors, of an entirely different nature to the above, may have in producing the condition:—

"M. L., æt. 58, the leader of the bar in a Western city, was forced to carry on the trial of a most important case, while his wife lay dangerously ill. From this time he began to find that he felt embarrassed when rising to speak, and that he was obliged to urinate always before speaking in court. The mere knowledge of these facts began to trouble him, and soon after he found that his emotions were less under control than they had been. At last, one day when about to sign his name, he found that his hand shook, because two gentlemen who were to act as witnesses were watching him. From this time he could no longer write, when overlooked, unless he made the most earnest effort. With these disabling conditions he began to fail in vigour and appetite, and to become excessively restless and irritable. Under fortifying treatment with long absence from home he became entirely well."



Again, a young man, æt. 18, while attending his father's funeral, slipped on the wet ground and fell into the grave. From this time he became strangely nervous, was startled readily, grew timid and apprehensive, and at last became unable to write while any one was watching the act. The tremour thus caused at last so increased that he had to give up a clerkship which he held. This condition of system came as it were in a moment, and converted a quiet, somewhat resolute person into a nervous invalid. I might quote other cases; the one I have given may suffice. This man remained in good physical health, and was thus in contrast with many cases of acquired nervousness which may, at least, be associated with states of feebleness, if they be not often traceable to these, but although such is distinctly true, the form of trouble causing weakness, malnutrition and anæmia, varies, and with its variation the intensity of the nervousness, and even its quality varies. Nor must we lose sight at any time of the character of the patient, for this also must make up a part of the case, and it will be one thing to deal with a case of congenital nervousness made worse by circumstances, and quite another to treat a person at one time firm and cool, and who has merely become nervous through disease or suffering."

In no other affection does heredity play so important a part, which, perhaps, explains why individuality is such a prominent feature. Verily, the prodigal son after sowing the time-honoured "wild oats," and thus bringing joy to the hearts of the old people, may transmit but defective "nerve force" to his offspring. Witness the long and famous neurotic history of the Kings of Bavaria.

In the acquired cases, the much vaunted stress of modern life, with its strain and worry, is given as the chief etiological factors, as also fright and grief. The ambitious youth, with but a feeble organization, is likely to fall a prey to it, and Dr. George Gould, of New York, in discussing the frequency of the so-called nervous asthenopia or "irritable eye" in neurotics, quotes refractive errors as important predisposing factors, and he illustrates his remarks by quoting the biography of many famous characters, such as Carlyle, De Quincy, and others, who were undoubtedly neurotics.

And coming to the connexion between general nervousness and other maladies, it is amazing to learn the extent of brain disease and other neural diseases which may exist without making the sufferer excitable, timid, tremulous, or in a word nervous, though the victims of general sclerosis, and still more those of paralysis agitans, are apt to suffer horribly from acquired nervousness, while in posterior sclerosis the patients are often singularly free from it.

How far visceral disease may cause it depends, as Weir Mitchell states, "a good deal on the individual, but more on the organ attacked," as we well know, for Pope has said "Hope springs eternal in the human breast," and certainly to judge from the psychological peculiarities of pulmonary disease, he was fully justified. On the other hand, the nervousness and depression which accompany disorders of the abdominal viscera are well known, and gave rise to the adage of the Presbyterian divine that "No man dies a triumphant death who dies of disease below the diaphragm."

As to the crucial question, what can we do for the neurotic? Osler's words that "many patients come under our care a generation too late" sound ominous, but much may be done in the way of prophylaxis in the case of children of neuropathic predisposition. "Train up the child in the way he should go, and when he is old he will not depart from it." There is no better than the "psychic hardening" referred to by Osler.

It has been said, with truth, that neurasthenic patients are cured, not by physic, but by the physician. Not that the anæmia, which is a most potent cause of general nervousness, must be treated, as well as any other such condition, but nervousness, whatever be its parentage, demands something more, for ony too often the symptoms which make up this annoying state, continue after we have amended the blood losses which may have caused them. There is, perhaps, in this fact but another example of the persistency of morbid habits. It is harder to unlearn than to learn—no wonder a famous Grecian flute player charged double fees to those pupils who had been taught by an inferior master.

"The man whose self-confidence has once been rudely shaken does not speedily reacquire hardihood in the face of disturbing impressions, and we have also to deal with the many instances of nervousness which arise out of moral causes or are of unknown birth. We must cut them off their routine lines, if possible, through the help of travel and change of scene, or outdoor sports," and above all means not have him moping by himself, for remember that no man is less fit for his own company than the neurotic. Said a man to Dr. Mitchell, "Colorado in summer, and horseback in winter—these are what cured me of nervousness."

The mental attitude of the nervous man demands of his physician the most careful attention, nor can we afford to disregard anything in his ways of life or his habits of thought and action. We must determine for him how far and how much he shall use his mind; whether or not it is well for him to continue his work whatever it be; what his amusements should be. I would commend Dr. Mitchell's "Rest cure" to your investigation.

And, gentlemen, in closing I merely wish to say, that I have presented the foregoing, mostly research work, as it must necessarily be at this stage, but partly also observation, together with a few stray thoughts which I happened to pick up in my occasional wanderings along the highways and byways of literature, in the nature of a short character sketch of the "Neurotic," and as illustrating to my mind, and I do hope to yours, the fact that the careful student will find in the individuality of his cases the need for the most minute study, and above all he will learn that in these neurotic conditions, the more fully he commands the confidence of his patient, the more can he effect.

Gentlemen, ours is, par excellence, the profession for the study of character, the crown and glory of life, and in the words of Samuel Johnson:

"Let observation with extensive view  
Survey mankind from China to Peru."

## BANANA FLOUR AND PLANTAIN MEAL AS A FOOD FOR CHILDREN SUFFERING FROM DIARRHOEA.

BY

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For many years past I have felt that our treatment for diarrhoea in infants and children is far from satisfactory.

This remark applies both to drugs given and to the nutrition supplied to the little patient. At the present time I will not discuss the drug treatment for diarrhoea, but will make a few remarks on the food to be given to infants and children who have the trouble.

In the nursing who suffers from diarrhoea one must regulate the mother's diet; she must stop the breast milk for a few hours and give the little one some kind of sterilized fluid, such as boiled water, barley water, rice water, etc. This is not given as a food, but to keep up the requisite amount of fluid in the circulation. The most important point to bear in mind, when undertaking to treat a case of diarrhoea in an infant, is to make up the loss. Why does a high saline irrigation do so much good in these cases? The saline is taken up greedily into the circulation and helps to fill up the vessels which are partially empty, and it raises the blood pressure which is far below the normal, the blood pressure depending largely upon the amount of fluid lost and upon the amount taken into the system. We have all seen the picture of the

young infant suffering from a severe diarrhœa, I do not mean cholera infantum, but a severe infective diarrhœa. The child looks bad and cannot sleep, the bowels moving frequently, etc. A high saline irrigation is now given (say one to two quarts, according to the age of the child), immediately the pulse is of a better character, and he falls into a refreshing sleep. As a rule diarrhœa in the nursling does not make much impression on the little one; he does not lose flesh rapidly and is fairly happy. One can easily pick them out in the out-door clinic.

We come now to the poor little one who is not nursed by the mother, and who develops a severe attack of diarrhœa. This child has been fed upon cow's milk which may have been good, bad or indifferent; others have been fed upon condensed milk, or one of the numerous patent foods. We have one broad rule in treating these little patients and it is this, stop all milk immediately. This is all very well, but we take away his staff of life, and with what do we replace it? What do we give him to make up for his thirty to forty ounces of good food? The answer is, practically nothing. We deprive him of his means of support and wonder why he does not thrive. We offer him barley water, egg albumen, rice water, arrowroot, etc. Barley water is practically nothing but water with a small amount of starch (F. Still), rice water is not much better, and albumen water is practically water. Now, as far as these are concerned, we might as well give plain boiled water, and it is more palatable. We must try to make up for the loss, and the only way to do this is to give the child some form of nourishing liquid diet. What is the cause of death in these children? Most death certificates read: "heart failure, exhaustion, etc.," but a better term would be "starvation."

When half of the fluid contents of the blood are lost from the vessels the heart has nothing to do, and gives up work. Another cause of death in these children is sinus thrombosis, due to concentration of the blood. F. Still found it only once in eighty-two autopsies in Great Ormond St. Children's Hospital.

A not infrequent cause of death in children who suffer from toxic diarrhœa is hyperpyrexia. The movements may be only three to five in the twenty-four hours, but death takes place rapidly. I have met with two such cases during the past few days; one developed a temperature of 107°, with nystagmus and cold extremities. The other had a temperature of 106.8°; both were rapidly fatal. In a case of this kind the little one's stomach should be washed out at once, a high rectal saline should be given, a dose of oil should be given by the mouth, strychnine should be given hypodermically, and a small amount of sterilized

water should be given frequently; these poor little infants keep their mouths open begging for a drink.

Now, if the above liquids prove of so little value, what must we give the child to keep up his nourishment and to fill up the empty vessels? For the past three summers I have had good success with banana flour and plantain meal. I want it to be thoroughly understood that I do not recommend banana flour and plantain meal as an ideal infant food. They are both rich in starch, and we all know that it is difficult for a child under six months of age to digest much starch. I strongly recommend it as a valuable food to tide over a critical period. They are both nourishing, easily digested and both possess astringent qualities. Furthermore, banana flour is easily obtainable, and can be made at the home of the little patient. There are some differences between the two flours; the banana flour is dark in colour and has a slightly astringent taste, and is not as palatable as the plantain meal. The plantain meal is whiter, and is taken more readily by the child. I do not think that it possesses quite as much astringent quality as the banana flour. Again, the banana flour is more easily obtained than is plantain meal which is much more expensive, even in the raw condition. However, plantain meal is an astringent food. The late Dr. Livingstone during his travels in Africa proved the efficacy of this fruit; his men being much troubled with dysentery they were fed upon plantain fruit and a rapid cure resulted.

Now, as to the method of use of these flours for infants, we mix one teaspoonful to one dessertspoonful of the flour with a little boiled cold water, we then add four to five ounces of barley water, and let it come to the boiling point. This can be given every two or three hours. For children between twelve and eighteen months of age, it can be made into a pap or porridge. For older children it is made into banana or plantain cakes or into pancakes. In fact a good cook can serve it up in a variety of ways. Quite a number of my patients have gone through a siege of severe diarrhoea without taking any medicine, and have depended solely upon banana flour or plantain meal.

Later on, in the fall, I intend to report a large number of cases fed by this method. However, at the present time I will mention a few cases.

*Case I.*—In 1908, my youngest case was an emaciated infant of five weeks of age. This little one's bowels were moving at the rate of fourteen times in twenty-four hours, it also vomited persistently. When it developed diarrhoea it was fed upon (or starved upon) barley water, etc. I washed out the stomach of this little six pound infant, and put it on the usual astringents, such as bismuth, etc. I nearly lost my little patient. I then started with the banana flour, one dram to two ounces of water,

later on I increased the quantity. My little patient rapidly improved and was soon well again.

*Case II.*—In April, 1908, I was called to see baby M., aged nine months, who suffered from simple diarrhoea; the bowels moved five to six times a day, the motions were small and green. I gave banana flour and he was well in twenty-four hours.

*Case III.*—In 1908, baby C., aged four months, developed a severe attack of infective diarrhoea. The bowels moved fifteen to twenty times in twenty-four hours; the motions were like water, foul and of medium size. The temperature was about 103°, and the pulse very frequent. Various liquid foods were tried, but they seemed only to aggravate the trouble. I gave plantain meal and the diarrhoea was soon arrested. As soon as we changed the food the diarrhoea recurred, and we had to keep the infant on this food for quite a time. However, the child recovered completely.

*Case IV.*—Baby W., age one year and four months, suffered from diarrhoea, the bowels moving about eight times in the twenty-four hours. The motions were small in amount and green in colour, the temperature was 102°, and the pulse 130. I gave the banana flour, and in one day the motions were reduced to one-half in frequency. Soon the child was quite well.

I might say that in many cases, in conjunction with the banana flour and plantain meal, I have been using a drug called divi-divi. However, my next paper, which will appear in a short time, will deal with the combined treatment.

The banana flour is manufactured in Jamaica and the British West Indies; the unripe green banana is used, for as a banana ripens the starch is converted into sugar. The unripe banana fruit is cut into thin slices and is dried either artificially or by the sun's rays. When it is perfectly dry it is ground into flour. The fruit contains about eighty per cent. of moisture, and thus it loses fully eighty per cent. of its weight through the process of drying. Banana flour cannot be manufactured at a low figure in Canada or the United States, as it takes fully thirty-five bananas to make one pound of banana flour. It can be manufactured much cheaper in the West Indies or in any banana producing country.

A few points in regard to the banana might prove of interest. The banana plant is not propagated by seed, but by young plants, which bud from the underground stem (or bulb as it is called) or an older plant. This bud at first gets all its food material from the parent bulb, but very soon forms leaves and roots of its own. When the young plant is six or eight months old it is about nine to ten feet high, and its own bulb is

eight to ten inches across. This is cut clean away from the parent and the roots trimmed off. It may be planted as it is, but as a rule it is cut down to within six inches of its bulb. This bulb soon shoots both from the centre and from eyes all around. One shoot takes the lead, monopolizing most of the food material supplied from the bulb, and this leading shoot is known as the plant, the others are the suckers. The underground bulb is the storehouse of food material for the roots, leaves, suckers, and finally, for the flowering shoot and the fruit.

Upon the supply of food material stored up in the bulb depends the number of hands a banana bunch will consist of. Some bunches have six hands, others nine or ten, etc. There are several varieties of bananas known in Jamaica, but the only one cultivated for export is that known formally as the Martinique or Pouyat banana, or commonly called the Jamaica banana, which cannot be rivalled.

The following analysis of banana flour is by Dr. J. T. Donald, official analyst to the Dominion Government:—

|                          |          |
|--------------------------|----------|
| Moisture.....            | 10.02 %  |
| Ash.....                 | 4.95 %   |
| Protein.....             | 3.06 %   |
| Fat.....                 | .52 %    |
| Fibre.....               | .55 %    |
| Dextrose.....            | 7.14 %   |
| Tannin.....              | 1.29 %   |
| Other Carbohydrates..... | 72.47 %  |
|                          | <hr/>    |
|                          | 100.00 % |

The ash contains:

|                      |         |
|----------------------|---------|
| Phosphoric acid..... | 10.52 % |
| Potash.....          | 37.24 % |

It will be readily seen that banana flour is a nourishing as well as an astrigent food. The tannin increases its astrigent quality to a great extent. It is rich in carbohydrates; however, it contains a fair amount of protein.

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# THE DIAGNOSTIC SIGNIFICANCE OF PAIN IN THE BACK.

BY

W. G. TURNER, M.D., M.R.C.S. Eng.

The diagnostic value of localized pain in the back, and the frequency with which systematic examination of that region is over-looked, are reasons for laying before you some points which have impressed me during the past year.

The material has been drawn from the clinic of the Royal Victoria Hospital, and from its variety presents certain difficulties to anything like proper classification. In chronic cases the old maxim of "expose the back," and this means from the occiput to the sacrum, must be observed. By this method alone can the examiner fully satisfy himself.

It might be well here to mention the popular superstition that pain in the back, especially if it is anywhere around the lumbar region, must mean diseased kidneys. If one goes over the history of patients suffering from Bright's disease, from stone in the kidney, or from septic infection of the kidney, it is surprising to note how few cases, if any, have pain in the back; that is to say, pain referred to the vertebral column. In most of these cases the pain is a dull ache or soreness referred to the lumbar region, and in the case of colic it is usually referred along a definite path. So, also, the number of cases of pain in the back, popularly referred to some displacement of the pelvic viscera, is far too great to have any definite scientific reason for localizing the cause in that region, and the proof of this lies in the fact that so many of the leading gynecologists of the day are very conservative in their operating on this class of cases.

The back ache so often met with in people of sedentary habits, especially women, and which can be directly traced to chronic constipation, I would just mention. But these various popular causes of back ache are very general, and I would like to bring to your attention certain localized facts with regard to pain in the vertebral column.

It must be remembered that referred pain is so frequent in organic disease of the vertebral column that the origin of intractable pain referred to any area supplied by spinal nerves, may frequently be discovered by thorough examination of the spinal column at the level of the nerve root. The method of the examination is simple. The patient, being stripped from occiput to sacrum, has the back thoroughly exposed to a good light; the vertical symmetry of the column is noted, as also the



symmetry of the scapulae; any posterior deformity is readily brought to light, and in these cases it is well to note the symmetry of the triangles formed on each side of the body by the normal contour of the body subtended by the arms hanging directly downwards. After this preliminary inspection the mobility of the column should be tested; forward, backward, and lateral bending, as by this means any limitation is readily revealed.

The site of the pain and the character are of great importance. In the neurotic conditions pain is usually general, and variable, both in intensity and as to site. In the organic conditions the pain varies whether the patient is in the upright or recumbent position. There is the variability of day and night pain; the character, whether of the gnawing, boring kind or the acute cramp-like, and whether this pain is localized, or whether referred on exertion to some distant part.

The most usual sites of pain that we have noted in relative frequency are, (1) The dorso-lumbar, (?) The lumbo-sacral, (3) The dorsal, (4) The cervical.

As I have already observed, classification of conditions is difficult, and we will first take up certain functional conditions and afterwards those of organic nature.

A number of cases present themselves who suffer from pure neurosis. This diagnosis must be made with the greatest care to exclude organic trouble: in fact, to be certain of excluding tuberculosis such cases are, at times, admitted to the wards to have the tuberculin test made. As a rule such is not necessary. In most cases the history of trauma is elicited, and, strange to say, at times the trauma may have antedated many years,—25 years in a case recently seen in consultation, the actual period of disability. Though pain is stated to have always been there since the trauma, careful interrogation usually brings out the fact of frequent violent exertion without necessitating subsequent rest in bed. In taking the history there is a rather garrulous description of the varying intensity of the pain, and every possible detail about it is related with pleasure by the patient. Examination: The movements of the spinal column are reviewed while at the same time conversing freely with the patient about the character and the time of maximum pain. This device usually permits the examiner to verify the full range of motion, flexion, extension, right and left lateral inclination and rotation, all of which are usually normal and not subject to any limitation. Reverting to the local symptoms is followed almost immediately by the complaint of pain on certain movements. Tenderness may be noted at certain levels, and these frequently vary if the pressure is practised

alternately from above downwards, or *vice versa*. In addition there are usually areas of hyperæsthesia on one side or other of the vertebral column, and very frequently an area of maximum pain is referred to the site of original trauma. The skin reflex is interesting owing to the marked variation according to whether the mind of the patient is diverted or no. By firmly stroking the skin toward the area with a pin head, in the latter case, a marked reflex is obtained, and so definite that the area may be outlined, while when the patient's mind is diverted no reflex is obtainable. Besides, the variation in the hyperæsthetic area does not, in most cases, coincide with any tenderness over the spines of the vertebral. The conduct of the patients during examination is very variable; at times they are well under control, at other times, as in a case recently seen, a condition resembling hystero-epilepsy comes on during the examination. Concussion of the column, either by pressing the head or striking the heels, or subjectively by the patient, as when driving in a carriage, does not cause pain. Where there is some flattening of the normal curves or some rigidity of the spinal muscles, the greatest care must be taken, and if any doubt exists it would be wise to have the patient put to bed and the tuberculin test given in order to exclude the organic lesion most frequently met with, tubercular spondylitis.

*Summary:* (1) Indefinite history of trauma; (2) Varying site of pain and irregular anatomical distribution; (3) Normal mobility; (4) Peculiar skin reflex; (5) Absence of pain on concussion.

The organic lesions, with pain as a prominent feature, may be considered under the heading of acute and chronic.

Under the first variety, I would like to mention certain traumatic lesions which give rise to very puzzling phenomena. Several such cases have come under notice and were very puzzling from the complexity of their symptoms. No mention is here made of the injuries from direct contusions but to a class which is larger than would be at first imagined, where the disability and pain date from some violent or else prolonged muscular exertion. The importance of this class must be realized. It was first brought to the notice of the writer while with Ludloff,<sup>1</sup> in Breslau, where artisans presented themselves for disability claims. The number of men from machine shops who complained of lame back and severe pain after heavy exertion was very striking. When examined, some limitation of the spinal movements was noted, also tenderness either over one spine or frequently just one side of a spinous process. The X-ray was used with negative results. In some cases there would be pain referred along some nerve trunk. A provisional diagnosis was

made in many cases of a tearing of the ligament between the transverse or spinous processes, and I really believe that in many of these cases there was an actual fracture or partial avulsion. As an example of this class, I beg to present one of my own cases:

The patient, a woman aged 42, came complaining of severe pain in the lumbar region. Her primary disability dated to a great muscular effort made in catching a heavy woman when falling. This occurred four years previous to date of consultation. Examination revealed marked tenderness over the right transverse process of the 4th lumbar vertebra. This was ascertained while the patient was lying on her face, as the muscles were far too rigid to allow such relaxation in the erect posture. There was also a neuritis of the 3rd and 4th lumbar nerves of the right side. The patient was markedly neurotic and, several examinations were necessary before a diagnosis could be made. The reflexes were exaggerated, but no Babinski was present. The X-ray showed a fracture of the transverse process of the 4th lumbar vertebra, but the duration of the disability suggested the possibility of an implantation of tuberculosis upon the site of the original injury. Fortunately, the tuberculin test was negative, and fixation of the back gave very satisfactory results.

Spondylitis of Pott's disease is the most serious of conditions which early causes pain in the back besides being the most frequent. For many reasons it may be wise to premise this condition whenever pain is a constant feature, until this diagnosis can be excluded. We have found in so many cases, especially those of the cervicodorsal region, that the lesion causes pain for a long period before flattening or deformity is present. When you consider the pathological picture, this becomes self-evident as deformity necessitates a good deal of destruction of the body of the vertebra before the hump is produced. Moreover, the whole dorsal region is so well splinted by the anatomical bony structure that a much more advanced lesion is required to cause deformity than in the dorso-lumbar or lumbar region. At these latter levels the muscular spasm and rigidity are relatively early in the disease, since the lumbar vertebral column has no additional bony support. The superincumbent weight of the head, upper extremities and thorax, on a weakened lumbar column, will early require the support and rigidity of the lumbar muscles whenever the patient is in the upright posture. In the recumbent position the pain is often increased, especially if the bed has very pliable springs; for then, as you are all aware, the normal lumbar lordosis flattens and greater pressure is brought to bear on the bodies of

the vertebra, and still more on that one which has diminished bony elasticity.

Most cases of Pott's disease no matter what level, give the history of pain for a prolonged period, and the pain is of the character of a dull ache. On exertion, especially stooping forward, the patient has increase of pain and complaint of weakness and stiffness in the back or neck. This last symptom is the result of the rigidity of the vertebral column and gives rise to the characteristic attitude assumed by these patients in picking up an article from the floor. The patient will frequently diagnose his case as rheumatism, and try to work off the stiffness, which naturally causes increase of pain. Inability to do usual work, avoidance of driving or riding in street cars will be early noted; and these patients will volunteer the information that when jolted, in the sitting posture, they steady themselves by lifting their own weight with their arms, and will seek to rest the back by placing their elbows on the arms of the chair.

In Pott's disease, therefore, affecting the body of the vertebra, pain is an early and very important symptom. In addition, tenderness, especially over the spinous process of the affected vertebra, and some tenderness also over the process above and below, is to be elicited. If the collapse of the vertebral body, in the destructive process, is not symmetrical the column is inclined to one side or another,—scoliosis, and where this is the result of the disease, there is frequently pressure on one of the nerves at its exit from the foramen.

Another method in which direct pressure on the nerve may be brought about is by disease affecting the articular facets or some lateral portion of the vertebra. The thickened tissue, whether granulation, abscess, or breaking down material, will cause a typical pressure neuritis. The patient frequently complains of pain at the peripheral distribution of the nerve, and when the part is examined anaesthesia with a boundary zone of hyperaesthesia may be noted. In searching for the cause repeated questioning may bring to light certain complaints such as "stiff neck," "clumsy gait," or "lazy nature"; the complaint of pain in the back may be nil.

Illustrating such a condition, I would call attention to a radiogram of the cervical vertebrae of a woman aged 60 years, who had been treated for a long time for neuritis over the shoulder. The cause is really a tubercular lesion involving the articular facets on the left side between the 4th and 5th cervical vertebrae. In this case there was definite neuritis, stiff neck and increase of pain when actively moving about. These last two signs should have given warning to examine for Pott's disease.

Another example is a patient, a boy aged 18, who for two years suffered from pain in the calf of the left leg and heel. In addition he had a stiff back, and though of an athletic family was unable to play any games. There was a definite neuritis of the 4th lumbar nerve; on examining the back there was lateral deviation, muscular rigidity, but no special tenderness. The X-ray showed a definite involvement of the lateral portion of the 4th and 5th lumbar vertebræ, probably the articular facets.

These cases serve to illustrate the great importance of examining the back in all cases, especially where anything in the history may suggest some lesion at that site as being a cause. However, where neuritis is present the tuberculin test must be given with the greatest care, as in many cases the reaction of hyperæmia and swelling in a localized lesion, frequently restricted by a dense capsule or aponeurosis, may be very dangerous to the nerve pressed upon.

The usual pain in Pott's disease is located, as we have said above, and if the destruction is very great with pressure on the cord, the signs of pressure paraplegia naturally result; of these there is no need to treat here as the deformity usually at once gives the clue.

Before going any further, the character of the pain and deformity in osteoarthritis, or rheumatoid arthritis, must be noted. This usually occurs as a stiff back, occasionally with pain referred out along several nerve trunks. The tenderness is usually located over the spinal foramina, and is due to osteophytes pressing on the nerve roots, as well as the pain at the site of the disease. Frequently the X-ray and examination for other signs of "rheumatic" disease will aid in the diagnosis. In most of these cases inspection of the back shows the rather "poker back" type, but we do not meet nearly so many of these characteristic cases in Canada as across the border. The knuckle, or small hump deformity, such as one meets with in Pott's disease, rarely occurs in osteoarthritis, and we do not, as a rule, get localized tenderness over any particular spinous process. Rigidity and general pain in the back are quite usual signs.

Of the static conditions, and by static, I mean those conditions which are due to malposition or to a change of relation in anatomical parts and not disease, there is one which has enlightened a great many cases of so-called lumbago, and that is subluxation or strain of the sacro-iliac joint.<sup>2</sup> Pain in conditions of this kind is usually complained of as a lumbago, and the number of cases which present the typical spasmodic attacks as in true lumbago and yet which can be completely relieved by attention to the lesion in the sacro-iliac joint, is very sur-

prising. The onset of pain is variable. In some cases it is a soreness and stiffness in the lumbar region. Again, it may be a stiffness with pain alone of one or both sciatic nerves, and, thirdly, it may be very severe and in fact a complete disability until slight displacement is relieved. The patient in this last case can hardly get out of bed, and it is impossible for him to straighten his back. There is no particular pain on concussion. The general health is perfectly good, and the disability may date in man, from strain, frequently idiopathic, and in women, it is very frequent after any prolonged illness, around the period of menstruation, and frequently when extra housework is suddenly indulged in. Here, however, in most cases the maximum tenderness is not located to the vertebral column. Tenderness and swelling are noted over one or both sacro-iliac joints. There may be also tenderness over the sciatic or both sciatic nerves, and the subjective complaint of pain in the shin or pain in the calf is very frequent. This pain is due to the close relation of the lumbo-sacral cord.

The subluxation can be at times relieved by manipulation, and where this displacement has been apparently due to upridding on one little ridge of the articular facet, a click can be readily felt and in some cases heard.

It is surprising to note how many cases of what we have been accustomed to call lumbago or myalgia, can be directly traced to this lesion, and the relief by the regular treatment of this joint or joints is very striking.

In some cases at the clinic we have noted that in addition to this sacro-iliac strain, in a certain number, there is exaggerated lumbar lordosis, and accompanying this some tenderness along each side of the vertebra. This tenderness practically corresponds with the exits of the spinal nerves, and in these cases the treatment must include the correction of the exaggerated lordosis; the support of a pendulous abdomen.

It is a pretty good working rule, in a case of sciatica, to examine these sacro-iliac joints in order to exclude any lesion there as being a cause.

Albee,<sup>3</sup> in New York, examined 50 cadavres, and in all of these found a complete joint with its cartilage and synovial membrane fully developed.

Anatomically, the sciatic nerve or lumbo-sacral cord crosses in front of the lower one-third of this joint immediately in front of the aponeurosis and is easily involved in any affection of the joint. We have found this frequent in so-called sacro-iliac strain, and the last three cases of tubercular sacro-iliac disease which I have seen came with the complaint of severe and intractable sciatica. In addition to these, one case of a

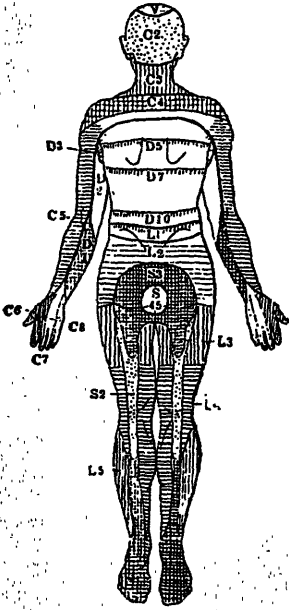
very rare condition—sacroma of the same joint—had the same complaint.

As the pain of scoliosis, whether rhachitic or static in origin, we find that it is more of the dragging character on the side of the concavity of the deformity, and occasionally a spinal nerve may be pressed upon. In general this is not the case, and the patient has a dragging pain and weakness which without question result from the distorted anatomical arrangement both of skeleton and viscera. Support of these naturally must be carried out.

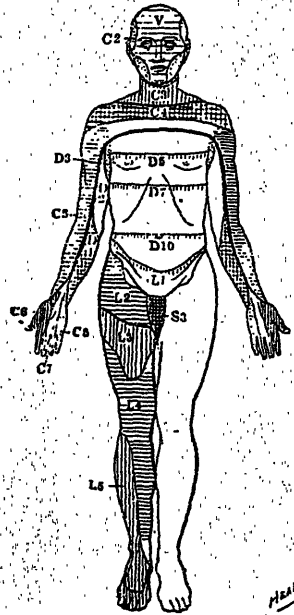
Finally, mention must be made of these various static deformities which result really from a misplacement of the centre of gravity of the body. The work of Lovett,<sup>4</sup> of Boston, has clearly shown how very many cases of chronic back ache are due to this cause, and by careful measuring and locating the centre of gravity and correcting the posture of the patient from ill-fitting corsets and unbalanced shoes to more rational wear, the cure has been quite complete.

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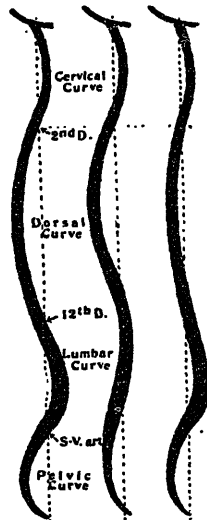
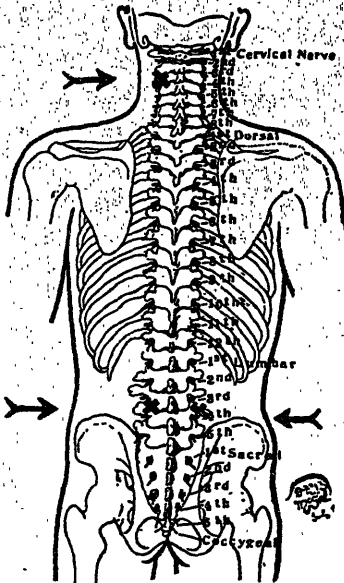
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HEAD



HEAD



NORMAL LUMBAR DORSAL Curvature. Flattening. Flattening.





## A CASE OF HÆMATOPORPHYRINURIA.

BY

H. B. CUSHING, B.A., M.D.

On July 15th, 1909, I was called to see an elderly lady with an acute attack of vomiting and a history of passing blood in the urine. Her relatives gave the following history: She had always enjoyed good health until seven years before, when she had a slight attack of hemiplegia affecting the left side. She recovered completely from the paralysis, but ever since then had been subject to periods of mental depression, lasting some weeks, during which she became somewhat melancholic, lost her appetite and suffered from intractable insomnia. Lately these periods had become more frequent and prolonged and, at the time I was called to see her, she had been in bed for nearly three months, greatly depressed, eating only on persuasion, and sleeping only after the use of hypnotics, which, however, had always been given in great moderation. On July 14th, it was first noticed the urine looked bloody and the next day she complained of epigastric pain, and vomited whenever anything was taken into the stomach. No cause for this acute attack could be elicited.

On examination, the patient was a woman 69 years of age, somewhat emaciated and anæmic. Her temperature was normal, her pulse 80, strong and of somewhat increased tension, the arteries being slightly thickened. Her tongue was very dry and she had complete anorexia. The examination of the abdomen showed slight tenderness in the epigastrium but no other abnormality save a somewhat prolapsed right kidney. Her bowels had not moved for two days. The urine was of a deep port wine colour, acid in reaction, specific gravity 1015, and to my surprise gave no reaction for albumen, and, microscopically, showed no casts or blood-cells. I then tested for blood, spectroscopically, and with the benzidine test, and could get no reaction. Being quite at a loss to account for its peculiar appearance I consulted Dr. A. A. Bruere, who confirmed my observations and declared the colour must be due to some pigment, but probably not to an aniline dye, as it could not be dissolved out with ether or chloroform.

The next day the patient was no better, the vomiting continued, the bowels did not move even after an enema, and she appeared weaker. A careful enquiry revealed no cause for the pigment in the urine, no unusual article of food had been taken and there had been no change in her medicines for the previous two months. She had been taking phenolphthalein periodically for her bowels, but this is not known to colour

the urine. She was also taking powders of sulphonal, grains iv, and trional, grains vi. She had taken one of these every night for nearly two months, but never more than one, and had never had bad effects from them.

The third day the vomiting had ceased, the patient was able to take some nourishment, and her bowels moved naturally with a normal stool. However, she appeared very weak and mentally depressed, and her urine was even darker than at first, being almost black in colour. I was still at a loss for a diagnosis when Dr. Bruere reported his further analysis of the urine, and I must confess his report took me altogether by surprise. He stated that by isolating the pigment and examining it spectroscopically he had been able to identify it as hæmatoporphyrin, which was iron-free hæmatin and derived from a disintegration of the blood; that when it appeared in the urine in such large quantities it was almost invariably due to taking small doses of sulphonal, trional, or tetronal for long periods of time, and further, that most of the cases reported had ended fatally.

I immediately instituted the treatment usually recommended, *i.e.*, stimulants and the administration of alkalis, but although the vomiting and constipation did not recur, the patient became progressively weaker, passed urine and fæces involuntarily, gradually sank into coma, and died ten days after the peculiar colour of the urine was first noticed. The urine remained of the same character to the end. Two days before death I thought I could distinguish signs of a left-sided hemiplegia, but the patient was too deeply comatose to make certain. No autopsy was performed.

Hæmatoporphyrin was discovered by Hoppe-Seyler in 1871; it is said to be iron-free hæmatin, and to be derived from the blood. Garrod claims that it is always present in the urine in minute traces. It has been found in larger amounts in the urine in many acute fevers, and especially in cases of hæmorrhage into the intestines from any cause, when the absorption of the blood from the bowel probably causes the pigmentation of the urine. Large quantities such as occurred in this case have generally followed the ingestion of sulphonal, trional, or tetronal. I was able to find in the literature quite a number of reported cases; one writer collects twenty, and almost all the cases were very similar in their course. Most of them occurred in anæmic women; all followed the use of the drugs in moderate doses taken repeatedly for some time, the periods ranging from one week to three months. One peculiarity is that the action of the drug seems harmless or beneficial for some time, and then the fatal symptoms arise suddenly. About 75

per cent. of the reported cases resulted in death. The symptoms were almost invariably as in the case reported above, viz., pigmentation of the urine acute vomiting, with constipation, progressive weakness, with obscure nervous symptoms, such as ataxia, mental confusion, or some form of paralysis, and, finally, incontinence of urine and fæces, and death in coma.

I could find no adequate explanation of the immediate cause of the hæmatoporphyria. It is undoubtedly due to some action on the blood and not to a kidney lesion. It appears to be an idiosyncrasy, only occurring in certain cases, while other persons can take the same drugs for long periods of time without ill effect. It can be produced in rabbits by the same means. Autopsies show nothing pathognomonic, but usually some form of degeneration of the kidneys, liver, or heart-muscle.

Cases are recorded which have occurred after only a few doses of sulphonal, but in most of the cases the drug has been taken regularly for several weeks. Large single doses never cause it. It is claimed that the danger can be avoided by periods of intermission in the use of the drugs, and that the symptoms are due to a gradual accumulation in the system. In the case reported, only a small number of powders had been prescribed originally, with directions for them to be taken occasionally as emergency arose. The patient had had the prescription repeatedly refilled on her own responsibility, and had been taking the powders every day without consulting a physician.

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THE TEACHING OF MEDICINE.

In the last Number of this JOURNAL we reprinted so much of the contents of the Bulletin of the Carnegie Foundation for the Advancement of Teaching as referred to Canadian medical schools. The report was not especially flattering to all the Canadian institutions; indeed, two at least came in for a criticism which might fairly be characterized as severe. One of these was the Halifax Medical College. The profession in Nova Scotia has not accepted the rebuke with entire humility of spirit. On the contrary, the Medical Society of Nova Scotia, in session at Yarmouth July 6th and 7th, after hearing an address upon the subject by Dr. D. A. Campbell, unanimously agreed that the report was "prejudiced, inaccurate, and misleading."

We take much pleasure in publishing elsewhere in this Number Dr. Campbell's address with the discussion upon it, and the resolution which arose out of that. Those who are acquainted with the personnel of the teaching staff will find it hard to disagree with Dr. Stewart when he characterized the employment of the word "mercenary," as "unjust and entirely uncalled for." Dr. Stewart very properly remarked, that it is the attainments and character of its graduates which mark an institution, and not the architecture or even the equipment of its buildings. What rather gives colour to this view is the fact that amongst the physicians who received their education at the Halifax Medical College are persons who are the equal of any who have graduated from institutions which are spoken of with high praise in the Report. It may not be

generally known that the greatest anatomist in America, and a surgeon equal to the best, received his early training in Halifax. In a controversy of this kind the men of Nova Scotia can very well be trusted to look after themselves.

### OBSTETRICAL TEACHING IN EUROPE AND AMERICA.

The committee appointed by the American Gynecological Society to study the present status of obstetrical education in Europe and America, and to make suggestions for the improvement of obstetrical education in America, has just completed its labours and submitted its report. The committee was composed of seven well-known obstetricians representing seven of the leading medical schools in the United States, viz., E. B. Cragin, of Columbia; J. Clifton Edgar, of Cornell; C. M. Green, of Harvard; E. P. Davis, of Jefferson; J. W. Williams, of Johns Hopkins; J. C. Webster, of Chicago; and B. C. Hirst, of Pennsylvania, the last mentioned being chairman. The committee obtained reports from Herbert Spenser for Great Britain, from Professor Winter (Königsburg) for Germany, from Heinrich Peham (Vienna) for Austria, from Th. Wyder (Zürich) for Switzerland, from Professor Launelonge for France, and an unsigned report for Italy.

As regards the teaching in the United States, more or less full details are given of the methods employed in Columbia, Cornell, Harvard, Jefferson, Johns Hopkins, Chicago and Pennsylvania.

There is such wide divergence in the various schemes of instruction that it is almost impossible to reach any satisfactory basis for comparison. Even among the seven schools in the United States there are radical and fundamental differences, and it would be difficult to select any one whose methods could be called really typical. It is also very much open to question whether Professor Winter's account of the teaching in Königsburg can be considered as typical of what is done in Germany, or that of Professor Launelonge as typical of the methods employed in France. In comparing the various reports, the following points seem to be of chief interest:—

1. The tendency to abandon or curtail didactic lectures, and to devote more time to clinical lectures and conferences, to ward classes and out-patient instruction, and to work upon the mannikin. In Great Britain, Germany, Austria, and Italy, in Columbia, Cornell, Harvard, and Jefferson, the didactic lecture is an important feature of the course. In Switzerland the attendance upon the theoretical lectures is not obligatory; in France "the courses are no more given in a theoretical way, but are principally practical demonstrations either in the lecture rooms

or in the hospitals (women's wards)." In Johns Hopkins, Chicago, and Pennsylvania, systematic lectures have been entirely or almost entirely abandoned, and the endeavour is being made to teach the students in small classes.

2. In Europe more attention seems to be paid to obstetrics than to gynecology; in the United States gynecology occupies an important place. With regard to Great Britain, Herbert Spenser, says, "A course of lectures thirty or forty or more each year, is given in obstetrics in all London schools. It usually extends over two years, and lectures on gynecology are given at many schools in addition to those of obstetrics."

3. In Europe the teachers of obstetrics are the only ones who teach the diseases of women and their surgical treatment. In the United States, of the first fifteen medical schools, nine have separate chairs of obstetrics and gynecology, while six have the chairs combined.

4. The tendency to increase the number of cases of labour attended by each student and to exact a certain term of residence in a maternity hospital. In Great Britain each student must attend twenty cases, and University students (Oxford and Cambridge) must have previously attended cases in the wards for at least one month. In some hospitals there is "personal attendance on about fifty cases by each student." In Germany "each student in the tenth Semester must live a month in the clinic, where he observes and conducts about forty labours, and performs the minor operations." In France "the students of the two clinical departments are inscribed turn about night and day to make a stage in the hospital wards, and follow the labour hour by hour till period of delivery. During a term they can follow about fifteen cases or more if they wish to do so." There are two terms of six months each. In Columbia "each student during his five weeks of practical service delivers personally on an average seven or eight cases, and sees from forty to fifty deliveries." In Cornell "students are required to reside for at least two weeks in the Manhattan maternity or other hospital, and personally confine at least six women." In Harvard "in addition to the many cases witnessed, the graduates of 1909 attended personally an average of twenty cases." In Jefferson, in addition to hospital work, each student has "from two to six cases delivered in tenements and under supervision and instruction." In Johns Hopkins there is "obligatory attendance of at least five cases of labour under supervision in the ward. By means of the elective work of the fourth year many of the students see from 25 to 40 out-door deliveries." In Chicago attendance upon five cases is required; but Professor Webster remarks, "We feel that the number of obstetric cases which should be attended by stu-

dents is too small. It should be at least twelve. We intend to increase this requirement as our clinical facilities improve." In Pennsylvania the number of labours attended by each student averages 7, "One week's residence in the South Eastern Dispensary for out-patient work" is required. In marked contrast to all this practical work provided for the student and required of him before he can present himself for his final examination, is the regulation which is in force in Italy; "the students in medicine and the midwives cannot perform any operation before the end of their course of studies."

5. The character of the examination which the graduating student is required to pass. After all, it is the final examination which determines the seriousness with which the student avails himself of his clinical opportunities. The student is essentially an opportunist. To most, the chief end of student life is the passing of the final examination, and not the preparation for life's work; consequently, the student is apt to concern himself but little with things which will not help him with his examiners. No matter what may be the clinical advantages offered or the clinical instruction given, if there is not a searching clinical examination at the end, the results will be unsatisfactory and disappointing. The information given in the reports regarding the system of examination is meagre and insufficient. Nothing is said about the examinations in Great Britain, Germany, France, and the United States. In Austria "the examination consists of diagnosis in parturient and pregnant women and in gynecological patients, and operations performed upon the mannikin." In Switzerland "in the final examination there is required:

1. Practical demonstrations of sufficient knowledge in the examination pregnant and parturient women and of gynecological patients.
  2. The performance of several obstetrical operations on the mannikin.
  3. A theoretical oral examination on obstetrics and gynecology.
- In Italy "the examination is only theoretic."

The recommendations of the committee are as follows:—

"We recommend that the teaching of obstetrics should occupy at least two years of the medical course, and that those expecting to practice obstetrics, should be urged to avail themselves of elective opportunities.

That the number of labour cases personally attended by each undergraduate student should be at least six; under supervision and instruction.

#### *Character of Instruction.*

We recommend all the known methods of teaching this branch of medicine, namely:

Didactic lectures.

Clinical conferences.

Ward classes and touch courses.

Hospital and out-patient instruction.

Mannikin practice in operative obstetrics.

And recitations.

Of the first three methods, we recommend especially clinical lectures and conferences.

We recommend that ample facilities should be afforded students to make antepartum examinations, including inspection, abdominal palpation, pelvetry, foetometry vaginal examinations, etc.

We recommend that a two weeks' hospital residence should be required before the out-patient practice.

#### *Scope of Instruction.*

It is recommended that as obstetrics at present includes pregnancy and parturition, their complications and consequences, and the complete recovery of the woman after labour, that obstetric instruction should include the medical and Surgical treatment of these conditions.

The tendency of obstetrics to become more surgical in practice, and to require a surgical training, is evidenced by the fact that in the medical schools of Europe, and in more than one-third of the first fifteen medical colleges of this country, namely, Columbia, Corneli, Jefferson, Medico-Chirurgical, Tulane, Yale, Long Island, Harvard, Johns Hopkins, Rush, Bellevue, Western Reserve, Michigan, University of Pennsylvania, California, the chairs of obstetrics and gynecology are combined under one head. Of these 15 medical schools, 6 have combined chairs.

In Canada the medical schools are much handicapped by the regulations of the licensing boards. As the requirements in the different provinces are not uniform, the curriculum has become overburdened in the attempt to satisfy the demands of all the boards. The new five year course will give some relief, the fifth year being devoted entirely to clinical work. But we must recognize the fact that ward work is very exhausting, and that a student cannot get much benefit if the hours are too long and work is too varied. The specialties will, no doubt, absorb a good portion of his time in the fifth year, especially as the boards are demanding more and more of that kind of work. It is just a question whether we are not broadening out too much and making it too hard for the student, whether we are not trying to teach him too much, and do too much, and not giving him time enough to think and assimilate. Attendance upon obstetrical cases requires much time, and in the hurry



of his sessional work the student is apt to regard this as lost time. It is not always the best men of the year who are keenest about getting a large number of cases; it is often the lazy man, the potterers, who love to busy themselves in spending hours in the waiting and doing nothing. The colleges are not expected to turn out skilled obstetricians any more than they are expected to turn out skilled surgeons or physicians. It is really the training which counts, rather than the number of cases attended. Ten or twelve cases well worked out, under competent supervision, and with good careful guidance and instruction, will be more likely to teach correct methods and form good habits than a hundred cases managed carelessly in the tenements. The solution of the problem would seem to be in the establishment of summer courses, post-graduate courses, elective courses, and short terms of residence in hospital to afford those who intend to practice obstetrics the opportunity to get a fair amount of experience and proficiency. If that could be done, the college course proper could be devoted to the exposition of the scientific side of the subject, the teaching of proper methods, ward classes, clinical lectures and conferences, in fact, all that can be best taught personally and individually, man to man. There is a great deal in personal magnetism, personal influence, and enthusiasm; and so long as these qualities are developed and utilized in the teaching of obstetrics there will still be an important place for the didactic and clinical lecture.

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Messrs. Lea and Febiger announce for immediate publication a new edition of Gray's "Anatomy." This, we believe, is the nineteenth edition. The work has been subjected to a thorough revision by Dr. E. A. Spitzka, Professor of Anatomy in the Jefferson Medical College. The changes and improvements in text and engravings are so extensive that the entire work has been reset.

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There is an asylum for idiots at Orillia. The place of the superintendent fell vacant. One would think that some knowledge of medicine would be a consideration in filling the place. Apparently the Ontario Government attaches little importance to that accomplishment, for we read that Mr. Joseph P. Downey has been appointed superintendent. We are further informed that the new position is worth \$2,600 a year with house and supplies, and is regarded as one of the best in the gift of the Government. Mr. Downey's qualifications are set forth in the following terms: Joseph P. Downey has been the member for South Wellington on the Conservative side since 1902, and has been re-elected at every general election since. He has always been con-

sidered a hard worker in the cause of his party. Mr. Downey was for a number of years editor of the Guelph "Herald," and since he severed his connexion with that paper has devoted himself to special writing. He is interested in Cobalt, and has a farm in Norfolk County. Mr. Downey is 65 years of age, and a Roman Catholic.

That a man is a Conservative, a hard worker in the cause of his party, a member of a Legislature, an editor, a special writer, interested in Cobalt, a farmer, and 65 years of age, does not on the face of it qualify him for that intimate association with idiots which this new appointment demands. We think that some member of the medical profession could have been found who was better qualified.

### Reviews and Notices of Books.

VACCINE THERAPY, ITS THEORY AND PRACTICE. By R. W. ALLEN, M.D. 3rd Edition. Demy 8-vo., pp. 277; H. K. Lewis, London. Price 7/6 net.

We are pleased to see the third edition of Dr. Allen's work appear; it is by this time quite well known, and there is need to say only that it is a very satisfactory presentation of the subject. Each edition offers some modification of technique and much good information upon the practical results obtained. We note with interest the increasingly large doses employed by the author and others; that he no longer uses a small dose, one or five million gonococcus vaccine, but goes at once to larger doses, with marked success; that some striking successes have been attained by the use of large doses in acute septicæmias of staphylococcal and streptococcal nature; and that there is a tendency to use less frequently the medical control, that is, to perform the laborious work of determining the opsonic index in relation to each dose; not that this is yet entirely to be dispensed with, but with many forms of vaccine it may be so. Notable, too, is the constant extension of the use of vaccines into new fields. Where success has not been obtained the author is quite frank in his statement of the case. The book is to be recommended.

THE EAR AND ITS DISEASES. By ALBERT A. GRAY, M. D., Laureate of the Leuval prize in Otology, International Medical Congress, 1909; Surgeon for Diseases of the Ear, Victoria Infirmary, Glasgow. Baillière, Tindall & Cox, London. 12/6.

We have much pleasure in recommending Dr. Gray's book as a text book of exceptional merit.

The whole subject is dealt with in a most thorough and satisfactory manner. A chapter on the acoustics of hearing is very useful and interesting.

In dealing with the question of operative treatment of chronic suppurative otitis his views are most sound and conservative.

The book is beautifully illustrated with photographs, 37 of which are stereoscopic. A small stereoscope accompanies the volume.

We wish the author a full measure of success in his publication.

E. H. W.

PHYSIOLOGY AND PATHOLOGY OF THE SEMICIRCULAR CANALS, BEING AN EXCERPT OF THE CLINICAL STUDIES OF DR. ROBERT BARANY, WITH NOTES AND ADDENDA GATHERED FROM THE VIENNA CLINICS. By ADOLPH E. WEISHOFF, M.D., and ROYAL S. COPELAND, A.M., M.D. Paul B. Hoeber, New York. \$1 00.

The above title gives a good idea of the contents of the book.

The authors have given a good translation of Barany's work which attracted so much attention three years ago, and which was reviewed by the present reviewer in this journal at that time.

The work is a very satisfactory translation, and will no doubt find a welcome in many quarters.

Coming at this date, it is somewhat late as most of the work is already incorporated in the recent text books of otology.

E. H. W.

DISEASES OF CHILDREN. By EDMUND CAUTLEY, M.D., F.R.C.P., Senior Physician to the Belgrave Hospital for Children, Physician to the Metropolitan Hospital, etc. London: Shaw & Sons; Toronto: D. T. McAinsh & Co.; 1,041 pages. Price \$8.50.

This splendid volume of over a thousand pages comes to us with all the authority of the London school of medicine, whose work, though not showy, is none the less solid. The book itself in its making bears the stamp of the best English workmanship. In the outset, we should like to testify to the comfort which there is in reading a book which contains no pictures. As the author says, the kindergarten teaching of medicine by pictures, diagrams, and models, is for students, not for serious practitioners. In view of the work which has been done in London during the past ten years upon diseases of children, the time had come for a new and systematic book, and Dr. Cautley has filled the need. We note next the ample space which has been allowed for a consideration of surgical affections; although we think that the author rather under-states the amount of time which is necessary for a physician to spend upon surgical training. Other facts worthy of note are the increased attention which is given to maladies which have been recognized only recently. These are, as stated in the preface to the book,

hypertrophic stenosis of the pylorus, acidosis, delayed anæsthetic poisoning, and cleido-cranial dysostosis. Also a new nomenclature is suggested in connexion with the disorders of bone formation. The recommendations for treatment, though they are very abundant, are free from dogmatism, and have regard to all the circumstances of the individual patient. The contents of the book fall into twelve sections which in turn are made up of seventy-three chapters. As an illustration of the freshness of the material, we may cite the chapter upon poliomyelitis and polioencephalitis, in which the experiments of Flexner, Lewis, Landsteiner, and Levaaiti, receive mention. This book is likely to remain for many years the authority in English upon diseases of children.

**DISEASES OF THE EYE.** By G. E. DE SCHWEINITZ, A.M., M.D. With 351 illustrations and seven chromo-lithographic plates. Sixth Edition. Philadelphia and London: W. B. Saunders Company, 1910; Canadian agents: The J. F. Hartz Co., Limited, Toronto. Price, cloth, \$5.00 net.

The sixth edition of Dr. De Schweinitz's diseases of the eye has just appeared from the press. This work has been reviewed several times in this journal since the appearance of the first edition in February, 1892, so that little needs to be added to our approbation of it. The new edition contains a special notice of the obstetric injuries of the cornea, the ocular complications of nasal accessory sinus diseases and a clear description of the various new operations practised in ophthalmic surgery. The book is profusely illustrated, and really ranks as a standard work both for the student and practitioner. It is with much pleasure that we strongly recommend it.

**THE PRACTICAL MEDICINE SERIES.** General Editor, GUSTAVUS P. HEAD, M.D., and CHARLES L. MIX, M.D. Volume I. GENERAL MEDICINE. Edited by FRANK BILLINGS, M.D. and J. H. SALISBURY, M.D. Volume II. GENERAL SURGERY. Edited by JOHN B. MURPHY, M.D. Volume III. THE EYE, EAR, NOSE AND THROAT. Edited by CASEY A. WOOD, M.D., ALBERT H. ANDREWS, M.D., and GUSTAVUS P. HEAD, M. D. Series 1910. Chicago: The Year Book Publishers, 40 Dearborn Street. Price \$1.50 Price of the series of ten volumes \$10.00.

The present volumes are part of a series of ten issued at about monthly intervals, and covering the entire field of medicine and surgery, each volume being complete for the year prior to its publication on the subject of which it treats. This series is published primarily for the general practitioner, although the arrangement in several volumes enables those

interested in spécial subjects to buy only the parts they desire. We have frequently commended these volumes, and we desire to do so again.

ELEMENTS OF PHARMACY, MATERIA MEDICA, AND THERAPEUTICS. By SIR WILLIAM WHITLA, M.A., M.D., LL.D. Ninth Edition; thirty-second thousand. London: Baillière, Tindall & Cox, 1910; Crown, 8 vo., pp. 672. Price 9/ net.

This, the ninth edition, may fairly claim to be a new book,—so much of it has been re-written, revised, and brought up-to-date. Yet it has not lost any of the qualities which made it a prized companion for generations of students since 1881, when it was first issued. The section on the non-official remedies is much more elaborate than in previous editions, and testifies to the large place which these preparations now have in practice.

DISEASES OF THE GENITO-URINARY ORGANS. By EDWARDS L. KEYS, JR., M.D., Ph.D., Clinical Professor of G. U. Surgery in the New York Polyclinic Medical School; Surgeon to St. Vincent's Hospital; Lecturer on Surgery Cornell University Medical School. 975 pages, illustrated. Price \$6.00. New York: D. Appleton & Co.

All who have been familiar with the work of the elder Keys will welcome this new volume by Edwards Keys, Jr., while others, if there are others, unfamiliar with the work of Keys—father and son—and who are interested in urological matters, cannot afford to neglect it.

It is an eminently practical work, designed to assist the general practitioner and student as well as the more specifically trained, and as such is to be heartily recommended.

Not the least of its commendations is the fact that it represents the personal experience of its author and his father, so that little is to be found that has not this personal touch. To a certain extent, a new arrangement has been attempted, the old anatomical classification being discarded in such instances as gonorrhœa, acute infections of the genito-urinary tract, tuberculosis, stone, etc. Such diseases being treated in their manifestations throughout the whole tract, as has been the case with tuberculosis of late years.

What, perhaps, appeals to widest interests is the treatment and prognosis of gonorrhœa. This is eminently conservative, yet on the whole encouraging after the many flurries which have beset the practitioner who must reckon with this infection and who must not.

Throughout, one cannot but be struck with the various changes which progress in these matters has rendered necessary. There re-

mains but a faint semblance to the work of ten years ago. The part played by the X-ray, the cystoscope and urethral catheter, become more and more prominent. Diagnosis of the kidney function, pyelography, etc., receive an amount of attention that was formerly to be looked for in but a few special books and papers. Indeed, the advance in accurate urological work is nowhere better seen than really it is throughout the whole book. We seem at last to have caught up with European work, and to have recognized the importance of the other kidney.

Among other things one notices that genito-urinary tuberculosis holds its wonted place. *B. coli* infection has received the additional attention which those who have been interested in renal infections would look for; while the kidney itself stands out more prominently as the primary cause of other acute infections of this tract. Urinary chill is said to be always accompanied by some renal disease, never to be neurotic, though its other vagaries remain unexplained. The contention is just. Calculous anuria has gained in importance from the viewpoint of immediate operation.

A long chapter on syphilis is appended, called for by the teaching arrangements of most schools, and a chapter on operatival measures closes the book.

It is a longer work than Casper's, but calls this work strongly to mind. Both are written by men who have something to say — something of their own.

R. P. C.

PHYSIOLOGY OF THE SPECIAL SENSES. By M. GREENWOOD, JUNR., M.R.C.S., etc., etc. Edwin Arnold, London, 1910. Price 8/6 net.

The author of this work points out in a modest preface that it is intended chiefly for two classes of readers: students of psychology who may desire to obtain more information regarding the physiological side of the senses than is usually found in works professedly dealing with psychology; and those who wish to go further in this department of the wide realm of physiology than the ordinary student. The anatomy and histology of the sense organs is not dealt with as the author desired to keep this work within very reasonable limits of space. The entire treatment of the subject is confined to the 236 pages of a small octavo volume, so well printed that it is a pleasure to look upon it. There are a certain number of illustrations including some original diagrams.

The writer states the sources on which he draws for his material and refers the reader who would go further to other books and papers; and assuredly, if the reader of this work does not wish to forage outside its limits, fault cannot be set down to the author. Nor are the references confined to writers in the English language only, as not rarely happens in English books, but the work is the outcome of wide reading.

The author shows equal sympathy with psychology and physiology which is not a common qualification in these days of extreme specialization.

Altogether, the reviewer finds this a most stimulating and in all respects admirable book.

The writer has performed a wisely selected task, and done it in an unusually creditable manner.

RÖNTGEN RAYS AND ELECTRO-THERAPEUTICS. By MIHRAN KRIKOR KASSABIAN, M.D. Second Edition. Philadelphia and London: J. B. Lippincott Company; Charles N. Roberts, Montreal.

This book forms part of Lippincott's new medical series which is edited by Francis R. Packard, M.D. It is a handsome volume of 540 pages, and contains many illustrations. The first edition appeared in 1907. At that time we spoke in terms of high commendation of the work, which now we desire to repeat. The progress in this interesting department of science has been so rapid, and so many new devices have been contrived, that a new edition was necessary to make the record complete. Chapter VI, which deals with radium and other radioactive substances, is especially interesting and is written in a spirit of scientific moderation. All workers in electro-therapeutics probably possess the first edition, and they will be glad to know that a second is now available. To surgeons and physicians who desire to keep themselves informed of the status of this method of healing the book will also be a necessity. A melancholy interest attaches to the work, as the author died as soon as it was completed from burns received in the practice of his profession. As early as 1902 the nails became affected, and two years ago it was found necessary to amputate two fingers. The axillary glands became involved and the malady then extended to the chest wall with fatal results.

Dr. Kassabian was an Armenian, born in Cæsarea, Asia Minor, 42 years ago, and in 1894 came to the United States to study medicine. He entered the Medico-Chirurgical College of Philadelphia in 1898, and in the same year, while the Spanish-American War was in progress, served in the Hospital Corps of the army. After graduating he

became instructor in electro-therapeutics and X-ray treatment in Medico-Chirurgical College. In 1902 he resigned from this position to become director of the Röntgen ray laboratory in the Philadelphia General Hospital, a position that he held until the time of his death.

DISEASES OF THE HEART AND AORTA. By ARTHUR DOUGLAS HIRSCHFELDER, M.D., Associate in Medicine, Johns Hopkins University, with an introductory note by Lewellys F. Barker, M.D., LL.D., Professor of Medicine, Johns Hopkins University. 329 illustrations by the author. Philadelphia and London: J. B. Lippincott Company. Price \$6.00.

There are many books upon this subject, but we welcome this one because it does not look exactly like any of the others, and because the author is in a position to write a book at first hand. He has for many years worked in the laboratory upon physiological and pathological problems at the same time that he has pursued clinical work. He may be said to know the laboratory side of heart experimentation and the bibliography of the subject thoroughly, to say nothing of many personal contributions to that division of science which he has made. His constant work in clinical fields serves as a corrective or an assistance to the tendency to be purely technical. So furnished, Dr. Hirschfelder is in an excellent position to write successfully this book. He has attempted to write at once for the technician and the practitioner, which is a hard task; the present reviewer speaks from the standpoint of the latter. The purely technical part is readable, and readily understood, and the bibliography is extensively given, and the physician of ordinary attainments will find a compression of this part of the subject to the minimum, while the laboratory worker will find the bibliography supplement the necessarily shortened text.

Less than a hundred pages at the beginning suffice for general considerations and methods, and there is a commendable simplicity about many of the illustrations which makes them useful. Wherever possible the author employs a graphic, diagrammatic drawing of the heart or the vessels to indicate the position of the valves, the distention of the chambers or the quality of the blood which can be read at a glance, parallel with the tracing which is under consideration. The electro-cardiogram, with which most practitioners are as yet not at all familiar, obtains adequate, though not undue prominence. Following this introductory part, the various general muscular changes are taken up, then the localized alterations of valves, followed by certain inflammations such as pericarditis, aneurysm, and by the discussion of questions such as the bearing of pregnancy on heart disease. A comparatively short section on



functional diseases of the heart, including the "thyroid" heart, closes the book.

The illustrations are numerous, and in general good, especially the diagrammatic ones, which are very clear and self-evident. The volume contains 632 pages, is well indexed, and as stated before, the bibliography given with each chapter is very extensive.

#### MENTALLY-DEFICIENT CHILDREN: THEIR TREATMENT AND TRAINING.

By G. E. SHUTTLEWORTH, M.D., and W. A. POTTS, M.D. Third edition: Crown, 8 vo., pp. 236. London: H. K. Lewis; Philadelphia: F. Blakiston's Son and Co., 1910. Price 5/.

The first edition of this book was published in 1895, by the senior author. It gives a general and particular statement of the institutions that care for mentally-deficient children in different parts of the world, and a resumé of the methods employed, with a special consideration of the processes upon which the methods are based. We do not imply that the book is in any sense a catalogue of hospitals, but upon the rapid multiplication of these in many countries the author fixes the interest of the casual reader upon the subject. Since 1898 it is notable that the number of mentally-deficient children housed in curative institutions in the United States has more than doubled. Especially interesting are the chapters upon etiology and upon treatment, subjects in which the authors' long experience has enabled them to speak with authority; the technical parts of the work are illustrated and amplified by case reports. We wish the third edition the success it merits in increasing the interest that is taken in these forms of disease; it is good that the practitioner should know how much can be done for such children.

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## Retrospect of Current Literature.

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### MEDICINE.

UNDER THE CHARGE OF DRs. FINLEY, LAFLÉUR, HAMILTON, AND HOWARD.

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#### THE ACUTE INFECTIONS.

Among the hundreds of papers on tuberculosis the most interesting are those dealing with the alleged presence of tubercle bacilli in the circulating blood. The astonishing statement of Rosenberger, in February, 1909, that tubercle bacilli had been isolated by him from the blood of every case of a series of 50 patients suffering from various forms of tuberculosis, was taken by most clinical and laboratory workers *sub judice*. His technique was of the simplest, consisting in the withdrawal of 5 cc. of

blood from the vein of the arm, which was then diluted with an equal quantity of 2 per cent. sodium citrate in normal salt solution; this was well shaken and placed in a refrigerator for 24 hours, when the sediment was pipetted off and a thick smear-preparation made, dried and then laked by means of distilled water; this was now dried and fixed and stained in the usual manner. As a rule, "tubercle bacilli" could be demonstrated in the first slide prepared, although sometimes three slides were necessary. His findings were confirmed by several clinical men (Forsyth, Peltz and Menhurhall) but usually in small series of cases. Negative findings were reported by Burnham, Lyons, Mohler, Ravenel and Smith, Hewatt and Sutherland, and most recently Burvill Holmes. The source of error has been pointed out by Brau, and confirmed by Burnham, Lyons and Burvill Holmes to be acid fast bacilli which are present in the sediment of the distilled water used to lake the blood smears.

A "typhoid cutaneous reaction" was tried by Floyd and Barker. Highly virulent agar cultures grown for 24 hours at 37°C. were washed with normal salt solution; this emulsion was incubated for 4 days; it was then sterilized in the hot-water bath at 60°C for half an hour; this was now standardized after the method of Wright, and later centrifugalized and the clear supernatant fluid used for inoculation; the extract was stronger than that used for the ophthalmic test and equalled 1 billion per c.mm. The technique for the inoculation was identical to that for the von Pirquet reaction. During the first 24 hours at the site of inoculation there appears a moderate red areola 0.5 to 1 cm. in diameter, but there are no vesicles or œdema or constitutional symptoms; the areola disappeared in 48 hours. Of 28 typhoid cases it was positive 19 times; in two paratyphoid cases it was negative as well as in 15 cases other than typhoid.

A most excellent paper by Strouse, and another one by Fussel, have appeared on "The diet in Typhoid Fever." I will quote chiefly from the former. A typhoid patient on the ordinary milk diet loses 200-300 grams daily (7-20 oz.), which is made up of water, fat and protein of the body tissues. The opinion of most investigators is that a more liberal diet prevents to a great extent the protein loss due to fever as well as that due to starvation. A normal individual of 70 kilos requires 2,300 calories in the 24 hours, but in fever there is increased heat production which necessitates 2,800 calories; if this amount be not given the patient will burn up his own tissue to supply the deficit, but 1,500-2,000 cc. of milk produce only 1,000-1,400 calories, hence 3-4 litres of milk would be necessary for the caloric needs. Now, in typhoid the absorption of the

most easily digested food, including milk, is 5-10 per cent. less than normal. Further, it is impossible to prove that food, such as egg or meat, will reach the Peyer's patches in a more solid form than milk which enters the cardiac orifice a fluid and leaves the pylorus a solid. Barrs, Shattuck, Thayer and Kinnicutt, have found that with a more liberal diet the death rate is lower, there are fewer perforations and hemorrhages and only a slight increase in relapses. abdominal pain, nausea, vomiting, and tympanites are less common. The duration of the illness and convalescence is shorter. The authors, therefore, recommend a dietary as given by Shattuck.

L. H. Spooner, of Boston, gave his experience with prophylactic anti-typhoid inoculations carried out among the medical and nursing staff of the Massachusetts General Hospital, where ward infections occur each year. The technique was similar to that of Wright and was as follows: A 24 hour agar culture of *B. typhosus* was washed into a sterile tube; the number of bacilli per c.mm. was counted by means of a Zeiss blood platelet counter; the tube was then placed on a water bath at 53° c. for one hour; this suspension was diluted with normal salt solution so that 1 ccm. = 400 million bacilli. Several inoculations were given at intervals of 3 days, beginning at 50 millions and then 100 millions. Of the 103 persons inoculated none developed typhoid fever, though continually exposed. The blood from these inoculated persons showed an agglutination reaction in dilutions ranging from 1 to 10 to 1 to 500.

### *Carcinoma.*

Among the mass of literature on this subject, two papers stand out prominently on account of their importance clinically.

One is a paper by Elsberg, Neuhof and Grist, entitled "A skin reaction in carcinoma from the subcutaneous injection of human red blood cells." Their method differs from that of Crile in that it is *in vivo* and not *in vitro*. Briefly, it consists in the subcutaneous injection of 5 minims of a suspension of washed red blood cells which have been left on ice for 24-48 hours. In about 5 hours there appears at the site of injection an irregular, raised, boggy and tender oval area with well defined margins; this is followed by a greenish ecchymosis. In 69 cases of undoubted cancer the reaction was present in 89.9 per cent., while it was negative in 95.4 per cent of 325 non-cancerous cases. When the disease was far advanced it was uniformly negative.

Neubauer and Fischer have recently reported upon "The presence of a peptide-splitting ferment in carcinomatous gastric juice and its diagnostic significance." Friedrich Müller, several years ago, suggested that the delay in gastric digestion in carcinoma was due to the presence of

an autolytic ferment. The proof of such a ferment has been rendered possible by the work of Fischer and Abderhalden upon the peptides, and more especially their relation to various ferments. No peptide is known that is broken up by the gastric juice, while there are many that are acted upon by the pancreatic juice and the organ ferments. The authors made use of glycyL-tryptophan, which, when split into its component parts gives a red-violet ring with bromine water due to the free tryptophan. They first proved that the juice of carcinomatous-tissue splits this polypeptid very rapidly, but not in the presence of equal parts of  $n/10$  Hcl, even though the latter be neutralized by calcium carbonate. Further, they found that normal gastric juice, both in animals and man, did not split the glycyL-tryptophan. Their method was as follows: The gastric contents were first tested for blood and bile, both of which would act as ferments; then in the filtered juice free tryptophan is tested for in the usual manner; if all these tests are negative 10 cc. of the filtrate are taken and a little glycyL-tryptophan is added, the mixture overlaid with toluol (to prevent bacterial decomposition) and then placed in a thermostat at  $39^{\circ}$  c. for 24 hours; 2-3 cc. of the juice are pipetted off, 2-3 drops of 3 per cent. acetic acid are added; then bromine vapours are carefully poured in; the mixture is shaken when a rose colour will appear if tryptophan be liberated; if negative on the first test, one needs more bromine till the fluid is coloured yellow, when if the pink shade now does not appear, the test may be considered negative. The test was negative in 26 cases of gastric ulcer, hyperacidity, etc., and positive in 17 of 19 undoubted, and in 6 of 10 possible cancer cases.

### *Syphilis.*

The relation of "syphilis to aneurysm" has been admirably discussed in a recent paper by Osler. He first points out that syphilis itself, or in its various nervous manifestations, was responsible for 6,000 deaths in England in 1907, and aneurysm for an additional 1,140. A luetic aortitis is characterized by the localization of the process to the first part of the aorta, or about the origin of the great vessels, or lastly just above the point where the aorta passes through the diaphragm; the intima is scarred and puckered by narrow linear furrows and scattered areas of translucency. Microscopically, the media shows necrosis, fragmentation of the elastic fibres, round celled infiltration with here and there giant cells; the intima is atrophied or thickened in places, but rarely calcified, while the adventitia shows a round-celled infiltration about the vasa vasorum or even an obliterative endarteritis of the smaller vessels. The spirochæta pallida is often demonstrable. Osler admits

that lues is not the only cause of aneurysm, which may be due to any of the other acute infections as typhoid, etc. Ordinary atheroma does not lead to aneurysm, but rather seems to protect against it. The paper closes with some interesting statistics on the frequency of aneurysm; thus there were 99 aneurysms among 3,100 autopsies, or 1 in 31 at Baltimore. Osler obtained a definite history of lues in 58 per cent. of his private and 40.9 per cent of his hospital cases.

During the past year Leo Brieger, of the Sinai Hospital, has published a series of papers on what he calls "Thrombo-angitis obliterans." This is a definite clinical and pathological entity characterized by a thrombotic occlusion of arteries alone or both arteries and veins, giving rise to pain, intermittent claudication, redness of the limb when in the dependent and blanching when in the elevated posture, pulseless vessels, trophic disturbances and often gangrene. There is no evidence that either erythromelalgia or Raynaud's disease is dependent upon an organic obliteration of the arteries or veins.

#### *Tabes Dorsalis.*

Among the current literature of tabes dorsalis a paper by Klippel and L'Hermitte upon nasal crises merits a passing remark. These crises may occur early or late in the disease, and consist of a tickling in the nose with a subjective bad odour and disagreeable taste. Sometimes there may be sneezing or spasmodic cough with lachrimation, rhinorrhœa or periods of excessive nasal secretion. Pathologically, one finds disease of the olfactory tract and the fifth nerve.

#### *Amaurotic Family Idiocy.*

II. Vogt, in a recent number of the *Archiv für Kinderheilkunde*, has described the symptomatology and pathology of the condition known as amaurotic family idiocy. He points out that in addition to the infantile type first described by Warren-Tag and Sachs, there is a juvenile type clinically identical with the former, though not appearing until the 2nd to 4th year. In both types there is a family tendency, with either neuropathic or psychopathic diathesis, there is often a blood relationship in the parents; the infantile type is almost peculiar to the Hebrews; lues and tuberculosis play no rôle. In both types there is blindness, paralysis and idiocy. In the infantile cases the eye grounds show optic atrophy and a peculiar change in the macular region consisting of a whitish zone with a dark brown or cherry red spot. In the juvenile type there is only optic atrophy. The course is progressive and ends in death from marasmus by the 2nd to 3rd year in the former

and 4th to 16th year in the latter. Both types depend upon a most widespread and generalized disease of the nerve cells throughout the entire central nervous system. Macroscopically, the brain may show no change, though two of Sachs' cases presented low types of cerebral convolutions, and three other cases have possessed brains of unusually firm consistency. Microscopically, one finds a primary cell disease with slight secondary changes in the nerve fibres. Special stains show that it is primarily a disease of the interfibrillar protoplasm, but not of inflammatory origin. There is swelling of the cell body with gross alterations in its shape, disappearance of the Nissl bodies, an eccentric position of the nucleus and vacuolization of the protoplasm. There is a profound disease of the ganglion-cells of the retina with atrophy at the fovea (hence the cherry red spot,) while around it the retina becomes thickened, cutting off the red colour of the choroidal vessels. The optic atrophy is due to the extensive disease of the nerve cells and nerve fibres.

It may not be out of place to briefly abstract a paper by Shuttleworth on Mongolian imbecility. In this disease the characteristics are noticeable at birth and consist in features which bear an extraordinary resemblance to the Mongolian—the face being broad, the hair straight and wiry; the skin sallow; the palpebral fissures oblique and almond-shaped, while the nose is flat and snubbed with expanded *alæ nasi*. The skull is brachycephalic with marked flattening of the occipital region. The scarred, fissured tongue with papillated surface, is fitfully protruded. The stature is small, and the lax ligaments enable the child to assume unusual postures. A deficient mentality of varying degree is present and marked by a general backwardness, a want of originality, but with remarkable powers of imitation, a retarded speech, and a placid disposition. Mongolian idiots form 5 per cent. of all imbeciles in England. The brain shows coarse primary with few secondary convolutions, an absence of annectant gyri and shallow sulci. The cortex is thin. Microscopically there is a marked rarefaction of the cells and thinning of the fibres.

#### *Leukemia.*

So many papers have appeared upon the various diseases of the blood-forming organs that it is difficult to give even a brief review of them. Perhaps the most important work is that by Hirschfeld and Jacoby who, repeating the work of Ellermann and Bary, successfully transmitted "chicken-leukemia;" of 49 hens inoculated, 18 developed true leukemia and 4 pseudoleukemia; subcutaneous inoculations proved

negative, while intravenous inoculation was successful. The disease developed in 1-5 months and was manifested by a progressive anaemia, a marked leucocytosis, especially of the lymphocytes; the emulsion of bone marrow, spleen, liver, etc., proved negative when passed through a Berkefeld filter, yet cultures by all ordinary methods remained sterile. Attempts to transfer the disease to pigeons, rabbits, and guinea-pigs failed. The authors believe that each species has its own specific leukemia.

Post, in a careful paper on acute myeloid leukemia, advances some interesting facts about the origin of the myeloid foci in the organs other than the bone marrow. According to Banti they are metastases from the bone marrow by the blood stream. Schultze and Ziegler also believe that they originate in the marrow but further develop in the organs without forming a definite infiltrating tumour-like growth. Post, however, believes that these foci develop from pre-existing foetal relics of myeloid tissue, which is stimulated to growth by a specific irritant. This is certainly true of the spleen and glands which contain myeloid elements in postembryonic life and certain acute infections. He admits that there is no proof that the non-haematopoietic organs contain myeloid tissue in foetal life; he accepts Schridde's beliefs that in the embryo the cells of the vessel-walls are the mother cells of the myeloblast and erythroblast; that post-embryonically the endothelial cells of the capillaries of all viscera can, under certain conditions, develop into myelo- and erythroblasts.

### *Diabetes.*

Many clinical papers on diabetes mellitus have appeared. The one of greatest clinical interest is a paper by Dubois and Veeder on the total energy requirements as determined by the Pettenkofer-Voit chamber. The patient was brought to nitrogen balance, while enough fat and carbohydrates were given to meet the individual caloric requirements. A normal person was first studied and subsequently a severe, and lastly, a mild case of diabetes. The number of cubic centimetres of  $\text{CO}_2$  per kilogram of body weight were 3.95 for the normal, 3.75 for the severe diabetic, and 4.04 for the mild diabetic. The authors conclude that the total energy requirement of diabetes does not differ from the normal. In addition to the 31-35 calories per kilogram of body weight required by the normal individual at rest, the diabetic should be given enough extra calories to cover the loss of sugar in the urine. If this be not done there is a breaking down of the body protein and fat.

MacCallum in an experimental study on the relation of the islands

of Langerhans to glycosuria came to the following conclusions: "When a portion of the pancreas is separated from the rest and its duct ligatured it undergoes extensive atrophy, a tissue remaining which is apparently composed of the islands of Langerhans and the remnants of the pancreatic ducts. If the rest of the pancreas be removed the atrophied remnant is capable of warding off glycosuria even when considerable amounts of dextrose are ingested. When this atrophied remnant is removed also, glycosuria appears at once spontaneously. Whether the glycosuria would persist until the death of the animal remains to be determined, but the experiment suggests the possibility that there may be some compensation on the part of other organs both with regard to glycosuria and faulty assimilation of fat after the loss of the pancreas. The experiment, in so far as it was successful, was intended as a demonstration of the specific control of carbohydrate metabolism by the island of Langerhans."

Ringer, from an interesting series of experiments on the influence of adrenalin in phlorizin diabetes in dogs, disproved Blum's contention that the glucose excreted in adrenalin diabetes was derived from fat. He first starved a dog which was kept in a cold room to render it glycogen-free; next a phlorizin diabetes was produced, and then adrenalin was given, which if Blum's contention be true should have caused a rise in the glucose-nitrogen ratio; such did not occur, except in one animal which was not rendered glycogen-free by sufficient exposure to cold. The author does not accept the renal origin of adrenalin diabetes for hyperglycæmia can be produced by injection of adrenalin after nephrectomy! He agrees with Straub and Ritzman who assign the glycosuria to an increase in the blood pressure with resulting anæmia from constriction of the blood vessels, and consequent imperfect oxidation; there results a demand upon the glycogen with a resulting higher glycæmia and glycosuria, as occurs in asphyxiation.

Two papers, by Cohen and LaWall, on pentosuria point out that this condition has no symptomatology. There are three varieties (1) alimentary, i.e., when the phenomena follow ingestion of food rich in pentose-producing substances (e.g., fruits and sweetbreads); (2) complicatory pentosuria, i.e., in association with glucose, as is not uncommon in diabetes, and (3) essential pentosuria, in which excretion of pentose is persistent, independent of diet and not associated with diabetes. The tests for pentose are a slight reduction of bismuth salts, with Fehling's solution a greenish turbidity followed by a yellow precipitate. It is not fermented by yeast and is optically inactive. But the crucial test is the formation of crystals of pentosazones which have a melting



point of  $156-168^{\circ}$  c. as compared with  $204^{\circ}$  c. the melting point of the dextrosazones:

*The Cammidge Reaction.*

In regard to the value of the Cammidge reaction as a diagnostic aid in diseases of the pancreas much has been written, and many divergent opinions have been expressed. Nine papers may be summarized as follows: From the figures given by these authors the reaction was positive in 47 and negative twice when the pancreas was found at operation or autopsy to be diseased. Further, it was positive 8 times and negative 28 times where no disease of the pancreas existed. The most favourable statement is by Maass, who concludes that a negative reaction excludes pancreatic disease, but a positive reaction speaks only for the probability of pancreatic disease. Roth, on the other hand, concludes that it is of no great diagnostic value.

C. P. H.

D. A. CAMPBELL, M.D. "Medical Education in Nova Scotia." (Read at Fift-Seventh Annual Meeting of Medical Society of Nova Scotia, held at Yarmouth, N.S., July 7, 1910.—*Maritime Medical News*.)

MR. PRESIDENT AND GENTLEMEN:—

With your permission I now desire to call your very special attention to a matter of vital bearing on medical education in Nova Scotia, a matter which deeply concerns the Provincial Medical Board, as the legally constituted guardian of such education, and one, therefore, which calls for the earnest consideration of this Society as the body which appoints six members of that Board, and which, moreover, has the whole care of the medical profession of this Province in its keeping.

Some of you may be already aware that "The Carnegie Foundation for the Advancement of Teaching"—a body richly endowed by Mr. Carnegie and having its headquarters in New York—has recently compiled and published a bulletin of some 350 pages, devoted to the subject of "Medical Education in the United States and Canada," in which is discussed first its history, its present condition, and its proper condition, while the latter half of the book is devoted to a more or less detailed account of the equipment, facilities, and status of each of the 155 Medical Schools in the Republic, and of the eight Medical Schools in the Dominion.

The aim of this work, as I understand it after a pretty careful reading, is to sweep or drive out of existence about four-fifths of the Medical Schools of the United States, and about half of the Medical Schools of Canada; and how aptly and ingeniously the various essays and reports

are fashioned to support and further that destructive aim, is evident from almost every page of the bulletin.

Thirty-one of the Medical Schools of the Republic, and four, or at the most five, of the Medical Schools of the Dominion, are marked for preservation, or amplification, while one hundred and twenty-four schools in the United States, and three or perhaps four, in Canada, are plainly marked for slaughter, and to use the language of the Report: among those whose "speedy demise" is aimed at is the Halifax Medical College.

The main or most serious charge against the college is that it is mercenary or "commercial" in its spirit and ideals, a charge which its whole history, and the character of the men connected with it since its inauguration as a Department of Dalhousie University forty-three years ago, most emphatically disproves.

But I had better give you the exact words of the report or criticism from the Carnegie Foundation's bulletin.

I shall now read to you from page 320, giving part of the report of the Halifax Medical College as follows: "Three fourths of the fees are distributed among the professors, and the disposition of funds is reflected in the condition of the medical college; it possesses an ordinary, ill-smelling dissecting-room and a single utterly wretched laboratory for pathology, bacteriology, and histology.

"A microscope is provided for each student.

"Though the same laboratory serves for the provincial board of health, no animals are used.

"There is no museum worthy of the name, and no laboratory work in physiology or pharmacology.

"The laboratory sciences have been starved that small dividends might be paid to generally prosperous practitioners."

The so-called report concludes thus:

"The question may fairly be asked: what is the value of the Dalhousie degree in medicine, won by students whose opportunities have been provided by Halifax Medical College? The connexion is, from the standpoint of Dalhousie University, highly objectionable."

At page 36 of the bulletin, the Halifax Medical College is grouped with a number of institutions of which it is said: "It is indeed stretching terms to speak of laboratory teaching in connexion with them at all."

On page 88, we read: "Elsewhere, dissecting-rooms are indeed found, but the conditions in them defy description. The smell is intolerable; the cadavers now putrid, as at Temple University (Philadelphia), the Philadelphia College of Osteopathy, the Halifax Medical College, and

in many of the Southern Schools, including Vanderbilt; again dry as tanned leather,—at the University of Tennessee, &c.”

At page 139, the report, referring to the Halifax Medical College, speaks of the “disgraceful condition of the premises.”

At page 325, Laval and Halifax Medical College are characterized as “feeble”; and at page 326, the Halifax Medical College is given notice to get off the map as follows:

“At this moment the needs of the Dominion could be met by the four better English schools and the Laval department at Quebec. Toronto has practically reached the limit of efficiency in point of size; McGill and Manitoba are capable of considerable expansion. The future of Kingston is at least doubtful.”

With this summing up, it will be noted that Laval at Montreal; the Western at London, Ontario; the Halifax Medical College, and possibly Kingston, are consigned to the scrap heap. According to the report they “have no present function.”

The parts of the report not included in this summary deal fairly enough with the Halifax Medical College and therefore do not cast discredit upon it. But you will agree with me that the parts I have quoted would, if true and well-founded, constitute a severe indictment of the Halifax Medical College, and that in any case they call for the earnest consideration, not only of the College itself, but also of Dalhousie University, of the Provincial Medical Board, of the Medical Society of Nova Scotia, of the Provincial Board of Health, and, through that last body, of the Provincial Government of Nova Scotia.

But to answer all these grave charges against the Halifax Medical College is, I am glad to say a comparatively easy matter. All that is necessary is to get the facts.

And here let me state that in proceeding to answer these charges, as I now propose, I have not been commissioned or instructed by the Medical College so to do. I did indeed inform the Executive of the College of my intention to address the Society on this subject, and may be considered to have the consent of that body to do so; but what I have to present is entirely my own independent, personal view of this matter, based on an intimate personal knowledge of the College throughout its history and a full understanding of all the questions involved.

For such a task, it may, perhaps, be allowed that I have some needed qualifications. For some forty years I have been familiar with the affairs and work of the College and with the officers and teachers therein. For thirty-five years I have been one of the teachers, and it now happens that of all the present professors I am the senior in years of service.

Some further qualification may also, perhaps, be allowed me, when I come to speak of laboratories and laboratory teaching, seeing that some time ago I spent eight months in the laboratories of the Medical Department of the Johns Hopkins University, and should therefore know something as to what laboratories and laboratory teaching should be.

Now, I think we shall be the better able to weigh and appreciate this Carnegie Foundation report and the serious charges therein contained, if we inquire somewhat in detail into the circumstances and manner in which that report was obtained or arrived at.

Two delegates, Mr. Abraham Flexner, of New York, and another gentleman, Dr. N. P. Colwell, of Chicago, were sent by the Foundation to visit the Halifax Medical College and report upon it.

All the circumstances connected with their visit happened to prove very unfortunate for the success of their mission, that is, assuming that their mission was to gather up all material and relevant facts bearing upon the subject of medical education at Halifax, and to present an accurate and just report.

In September, 1909, President Pritchett of the Foundation, sent a letter to Halifax intimating that a visit of delegates was contemplated, but stating no definite date for the visit.

It so happened that when, about the middle of the following month, the delegates arrived suddenly and unexpectedly in Halifax, Dr. L. M. Murray, the Pathologist, and the Secretary of the Halifax Medical College, was absent in Montreal, and no officer of that College ever saw the delegates, or even knew of their arrival in Halifax until after they were gone.

When the delegates arrived in Halifax it was after a certain midnight, in fact about one o'clock of a Saturday morning—the day as you all know which is an off-day, or at best only a half-day, in Halifax.

The following morning President Forrest, of Dalhousie University, was informed of the arrival of Mr. Flexner and Dr. Colwell, the delegates, at the Halifax Hotel, and he with Dr. Lindsay, Secretary of the Medical Faculty of Dalhousie, promptly called upon them at the hotel.

Mr. Flexner asked such questions as he thought proper, which were duly answered.

The delegates, who were determined to leave the city by an early train that afternoon, then paid flying visits to Dalhousie University, the Halifax Medical College, the Victoria General Hospital, and the Halifax Dispensary.

The whole rush performance was enacted in about four hours, and the delegates departed, apparently assuming that they "knew it all," though

they had not consulted with a single officer of the Halifax Medical College, though they had inspected only a portion of its equipment, though their visits to the Dispensary and the Victoria General Hospital (entirely without the knowledge of the Superintendent) was entirely too brief and cursory to obtain correct knowledge of their work and of their teaching facilities available for the College and its students, and though their inspection and enquiries were prosecuted with such haste that they appear to have been unable to take away with them any clear and accurate understanding of even what President Forrest and Dr. Lindsay had told them.

President Pritchett, in his introduction to the bulletin, apparently having in view such rush inspections as that made at Halifax, and anticipating objections thereto, has asserted by way of defence to his methods, "a trained observer can quickly grasp the spirit, ideals and facilities of a professional or technical school."

It is regrettable to have to state that his delegates who visited Halifax have displayed no such wonderful perspicacity.

In the draft report prepared by the delegates or Foundation, and sent, in February, 1910, to President Forrest, of Dalhousie, for "comment," as the letter accompanying it stated, there were, among other grave inaccuracies, such astounding misstatements as the following:

1. That in Medicine Dalhousie University is the *licensing authority* for the Province.

2. That Dalhousie University subjects the students of the Halifax Medical College to only a *single* examination.

3. That one-half the members of the Medical Faculty of Dalhousie University are members of the faculty of the Halifax Medical School.

4. That three-fourths of the "total income" of the College are distributed among the instructors.

5. That there is no museum and no laboratory in the school.

6. That the two hundred free beds at the Victoria General Hospital are *not* all open to the Medical School.

7. That the students are *supposed* to attend the City dispensary.

Every one of these statements is, as you all know, entirely opposed to the facts.

(1). *Not* Dalhousie, but the Provincial Medical Board is the licensing authority.

(2). Dalhousie subjects the students of Halifax Medical College *not* to a "single examination" at the close of the medical course, but to a strict examination at the close of *each year* of the course, which since 1908 has been extended to five years.

(3). The Medical Faculty of Dalhousie is not largely made up from the Faculty of the Medical College, but the two are quite independent, and in personnel quite different.

(4). Instead of three-fourths of the "total income," only about forty per cent. of the *fees alone*, have been distributed among the teachers of the College throughout its history.

(5). There are both a museum and a library; the museum is small but suitable and useful, and the library is valuable, consisting of over 3,000 volumes, and is constantly being increased by the addition each year of \$200 worth of the latest books, bought with the income from the Cogswell Fund.

(6). The 200 free beds at the Victoria General Hospital are *all open* to the Medical College, and the clinical teaching is extensive, and, with the small classes in attendance, is very thorough and effective.

(7). The students are not merely *supposed* to attend the City Dispensary, but they are *required* to attend there, and do attend, and in connexion with that institution, though despised by the delegates as "small," receive valuable teaching and are afforded opportunities for good practical work.

It is certainly very remarkable that two experts, certified to be able to learn all about the spirit and ideals of an institution at a glance, should have drawn up a report containing so many inaccuracies; but it all goes to illustrate what I have already said about the hurried and utterly inadequate character of the visit of inspection.

Perhaps, moreover, some of you will also note that the errors are all on one side, all tend one way, all go to the making out of a case against the teaching of the Medical College and against the value of a Medical diploma or license granted in Halifax.

So glaring were these errors that, after the "comments" sent back from Halifax, these particular misstatements were eliminated and do not appear in the report as published on pages 320 and 321 of the bulletin.

So far no harm was done; but there were other grave errors and omissions in the draft report, for which the Halifax "Comments" supplied considerable material for facts for correction.

These "comments" and acts, however, the Foundation saw fit to ignore, and so stuck to their errors and consequent misrepresentation.

For example, the draft report had disposed of the whole subject of practical Anatomy thus:

"The Medical College possesses an ordinary, ill-smelling dissecting-room."

The Halifax "comment" corrected the false and misleading statement as follows:

"In the Halifax Medical College there is an ordinary, well-lighted dissecting room.

"There is an ample supply of material for dissections and for the operative surgery class, the result of a very satisfactory Provincial Anatomy Act.

"Formalin with Arsenic and Glycerine are used as preservatives.

"There is an appointed time (2 hours) each day for dissecting, during all of which the professor and his assistant are present aiding students or examining them on their work.

"Every student is supplied, free of expense, with a set of bones for use at home."

The Halifax statement of facts shows that in the Halifax Medical College, most ample attention is devoted to the important subject of Anatomy.

The Foundations's report of the matter would make it appear that the teaching of Anatomy at the Halifax Medical College is mere make-believe and disgraceful.

The truth is that the subject of Anatomy is taught at the Halifax Medical College in a manner that will compare favourably with the teaching in any of the best schools in America.

It is true the College has no expensive refrigerator plant, but it uses proper means for the preservation of the dissecting material.

But every point of the Halifax statement of facts regarding Anatomy, the Foundation deliberately ignored, and adhered to their meagre, "ill-smelling," and misleading statement.

The Foundation even go beyond the "ill-smelling dissecting-room" phrase of their draft report, and, at page 88 of the bulletin, charge the Halifax Medical College with having "putrid cadavers."

That all such statements in this bulletin regarding the Halifax Medical College are absolutely without any justification in fact, can be vouched for, and is vouched for, by many Halifax men who are quite as trustworthy and reliable as any connected with the Carnegie Foundation (or any other body).

And here I may call your attention to a significant little incident.

You will recollect that it was noted in the Halifax statement regarding Anatomy at the Halifax Medical College, that "Every student is supplied, free of expense, with a set of bones for use at home."

This fact with all the rest of the Halifax statement, the Foundation have deliberately ignored and suppressed.

Some might suppose that this act was passed over as of small importance; but if you turn to page 83 of the bulletin, you will find that when the College is "Cornell (Ithaca)" and not the "Medical College (Halifax)," the Foundation consider such a fact of so great importance that a very special statement of it should be made in the bulletin. Thus you will find on page 83 the following foot-note:

"At Cornell (Ithaca) a complete set of bones is given out to each student."

Thus you will see that a practise which is worthy of special note and credit in the case of Cornell (Ithaca) is only worthy to be ignored in the case of the Halifax Medical College.

Just ponder that incident for a moment, in connexion with all the other harsh statements and determined omissions, and see what you will be forced to conclude regarding the spirit, reliability, fairness, and purpose of this Carnegie Foundation report.

When you find a critic deliberately and persistently making statements tending to the disparagement of an institution; when, at the same time, you find that critic persistently suppressing facts which would clearly tend to the credit of that institution; what conclusion do you come to regarding the "spirit and ideals" of that critic?

Do you find the spirit of truth and justice, or the spirit of prejudice and preconceived purpose?

Now, let us turn to another paragraph of the delegates' or Foundation's draft report, and the Halifax "Comment" thereon.

The draft report asserted that "three-fourths of the *total income* are distributed among the instructors."

The Halifax "Comment" admitted that three-fourths of the fees (not the total income) were *sometimes* distributed among the teachers, but it added this important statement:

"A larger percentage may be required for expenses, in fact on occasions the whole fees for the year have been surrendered by the teachers."

As a matter of fact it was by paying the teachers nothing for two full years, that the College was able to put a new wing to the building and provide the pathological laboratory and equipment.

But the Foundation utterly ignored this important statement of fact thus brought to their notice in writing. The important qualifying statement finds no place in the Foundation's report.

Why?

Perhaps you can furnish an answer.

But you will at least note that such a statement about the teachers getting no part of the fees for a year or two at a time, in order that



College needs might be the better served, would have been a complete answer to the Foundation's charge of "Commercialism," and it would also have fairly disproved the Foundation's main thesis that "The Laboratory sciences have been starved that small dividends might be paid to generally prosperous practitioners."

The whole report regarding the Halifax Medical College, from the very first line to the last, is distinctly unfair and misleading.

At the very outset the College is described as a "proprietary school."

This is misleading. The Halifax Medical College is not a "proprietary school" at all in the sense that some of the United States schools are.

The members of the College corporation hold no stock or anything of the kind, and have no individual legal claim whatever in any property or funds of the College, either as dividends or otherwise.

The Halifax Medical College is no more a "proprietary school" than is any university in the country.

Moreover, they do not get it, and have no legal claim for it or any sum whatever.

The small sum which the College Corporation usually distributes each year among the teachers are in no sense dividends or salaries, but are entirely analogous to the honoraria distributed among directors of banks and other corporations, and among the members of other public bodies, such as the Halifax School Board, not at all by way of dividend or salary, but merely to mark and promote regularity of attendance and attention to official duty.

If a professor or other teacher neglects to give a lecture or demonstration, he loses his honorarium for that hour.

This system has been found to work well in the business world in promoting regular attendance at meetings, and it is also found to work well in the College, and perhaps ought there, especially, to have a place, since nearly all the teachers are engaged in busy practice, and often find it by no means easy to attend to their College duties.

But still I am bound to add, what I know to be a fact, that the teachers one and all think a great deal more of their college work and of their service to medical education, than they do of the small honoraria which merely mark their regularity of attention to duty.

It now occurs to me, Gentlemen, that in giving you this little account of how this Carnegie Foundation report was manufactured or arrived at, I have incidentally given a fairly complete refutation of most of the charges urged and uttered against the Halifax Medical College.

I may here just mention another deliberate omission in the Founda-

tion's report, though it was specially called to their attention in the Halifax "Comment," namely, that the Halifax Medical College provides teaching in Psychiatry, at the Nova Scotia Hospital for the Insane, an institution of some 400 beds, which, under the present highly competent superintendent and his able predecessors, has ever been conducted on the latest and most approved methods for the care and treatment of the mentally afflicted.

Hospital improvement and expansion are going on in Halifax, and with the development of the new Children's Hospital, improved facilities will be available for teaching in Pædiatrics.

But it now still remains that I should make special reference to the bulletin's aspersions as to the College Laboratory for the teaching of Pathology, Bacteriology, and Histology.

You will recollect that the bulletin's statement is:

"The Medical College possesses a single utterly wretched laboratory for pathology, bacteriology, and histology."

And this phrase, "utterly wretched," is used with reference to this laboratory several times throughout this libellous volume.

The words of the delegates' report might be understood to indicate that they considered it highly objectionable that a single room should be used for the three kinds of laboratory work, but, of course, as you know, there is no objection to a single room, provided it is large enough and has sufficient equipment to accommodate the several classes of students that there work at the several branches.

The laboratory was designed and equipped for routine work and teaching, and so far it has proved entirely sufficient to meet the requirement and the needs of the students of the College.

The classes are always small, never exceeding twenty in Normal Histology, or fifteen in Pathology and Bacteriology.

There are four teachers, two for Normal Histology, and two for Pathology and Bacteriology, one of the latter being also the Provincial Pathologist.

A new wing of the College building was specially designed and built to provide this laboratory. The cost of building and equipment was about \$5,000, mainly provided through the teachers receiving no part of the fees whatever for two years in succession.

This laboratory room is 40 feet long, 24 feet wide, and 13 feet in height. It is lighted from three sides by seventeen windows, each three feet by eight feet, with those on the South and East sides obscured so as to avoid glare. The light throughout the room is excellent.

The room is hot-water heated, electric-lighted, and well ventilated.

Plain tables are fixed round the sides of the room, and afford liberal working space for thirty students at once, or half as many again as the largest class that so far has ever been in attendance.

Such is an accurate description of the "single room" which the delegates describe as "utierly wretched."

The equipment of the laboratory cost \$2,000; and it is all comparatively new and in good order. This equipment includes twenty-seven students' microscopes, and also four high-class instruments for bacteriological work.

While the supply of instruments known as students' microscopes has been more than sufficient for any class up to date, yet the College's own supply of high-class microscopes is rather limited; but the professors have regularly been in the habit of supplying the shortage by lending their own instruments, so that each student has always had a suitable microscope for his work. When the classes increase the College will, of course, have to provide itself with more high-class microscopes.

There are also five microtomes of various types; an autoclave and other sterilizers; two incubators; facilities for making culture media, and all the glassware and material required for practical work.

The fact of this laboratory being used by the Provincial Bacteriologist is of great advantage to the College and its students, because it affords at all times an ample supply of varied and suitable material for pathological and bacteriological work.

That in the public interest, however, the work of the Provincial Pathologist should be greatly extended and put on an improved basis, is a matter which, at a later stage, I shall urge upon your attention.

The College so far has not been able to provide laboratory teaching in pharmacology, in the sense in which that word is used in the delegates' report, that is, by making experiments to observe the effects of drugs on living animals.

But the College does something far more practical and useful; it gives all its students a very thorough training in Practical Pharmacy; and it does that especially for the reason that many of our practitioners in this Province have to do their own dispensing.

For this course in practical pharmacy the Foundation gives the College no credit whatever, although attention was called to it in the "Comment."

As to the charge that there is no laboratory work in physiology, it is to be said that hitherto the teaching in physiology has been mainly didactic.

Two years ago, however, a move was made to provide, in some mea-

sure, for laboratory work in this subject; money was voted for the purpose, and a gentleman was chosen as teacher. It is now definitely decided that, at the next session of the Collège, he will actually begin this work.

Physiological Chemistry is provided for at Dalhousie.

It seems to me now, Gentlemen, and I trust it will appear the same to you, that I have already fairly covered and refuted all the serious charges against the Halifax Medical College, preferred by these distinguished, but by no means infallible, critics, and that I have also given you ample material from which to form a correct judgment as to the character, aim and spirit of this extraordinary production of the Carnegie Foundation.

That there is much in the volume of great value, which may be read with profit by medical men and educationists, I do not for a moment deny; but the evident aim of the whole work is altogether too destructive, and the methods adopted in furtherance of that aim are not characterized by sufficient regard for truth and justice.

In my opening remarks I intimated that if the charges against the Halifax Medical College were true and well-founded, the fact should call for prompt action on the part of the Provincial Medical Board and of this Society; but I think that I have shown you clearly that all the main charges are without foundation in fact.

But while it is only necessary to cite existing facts in order to refute the disparaging charges of the Carnegie Foundation delegates, it should be distinctly said that the Halifax Medical College is far from claiming perfection, or that it would not very joyfully welcome more extensive facilities for its work.

The ideals and aims of the College have always been of the highest.

When at first it was inaugurated as a Department of Dalhousie University in 1867, it was a part of a movement among the medical men of Halifax to elevate the standard of medical education in this Province.

It was felt that amendment of the Medical Acts was desirable for the elevation of that standard, but that such improved laws would be attended by some hardship to the young men of the Province, desiring to study medicine, and by some public injury through a scarcity in supply of qualified medical practitioners, unless a Medical School were opened in Halifax to save our students the greater expense of going abroad; and, indeed, at that time the most accessible schools, namely, those in the United States, were far from being all that was thought desirable, their period of study being too short and their requirements as regards preliminary education being nil.

Halifax at that time had a body of medical men of very marked ability, including Drs. Charles Tupper, A. P. Reid, A. J. Cowie, W. J. Almon, D. McN. Parker, Edward Farrell, W. B. Slayter, H. Gordon, R. S. Black, Alexander Hattie, and J. R. DeWolf; and to those may be added George Lawson, Professor of Chemistry at Dalhousie, a very thorough man in both Chemistry and Botany, with extensive experience as a teacher in Edinburgh, where he was conspicuous in the introduction of laboratory methods in the study of Biology, and also in Kingston, Ontario, where he had taken part in the inauguration of the Medical Department of Queen's University.

Nearly all of these men had received more or less of their professional education in Edinburgh, London, Dublin, or Paris, and the standard which they demanded was far higher than that generally prevailing on this Continent.

It was to promote such a progressive aim in medical education, and it was through the enthusiasm of men of such ability, training and ideals, that the Medical School at Halifax took its rise, and that school has never yet departed from the high ideals which attended its birth.

From the reorganization of Dalhousie onward, the establishment of a medical school at Halifax was constantly engaging the attention of the profession, and the man whose services proved most helpful to that end was Dr. (now Sir Charles) Tupper.

The services with which a medical man in this Province is most likely to credit Sir Charles Tupper are: (1) His defence of Dalhousie; (2) His advocacy of a Medical School, and (3) His reorganization of the Halifax Hospital, placing it on modern lines and a practical working basis.

Without this last item the establishment of a medical school would have been impossible.

When the question was first mooted about 1863 by the Governors of Dalhousie University the Medical Society of Nova Scotia declared it not feasible, because there was no Anatomy Act, and the clinical facilities, were insufficient.

Sir Charles was at one and the same time Provincial Secretary and President of the Medical Society, and one of the Governors of Dalhousie University, and his influence was, accordingly, very great and helpful.

In 1867 the school was inaugurated as a Department of Dalhousie University, but only as a preparatory school. This, however, was found

insufficient to meet the public needs of the Province, and accordingly the full school was organized in 1870.

The following requirements which the founders laid down for the school, prove that its educational aim was high:

(1). Compulsory Matriculation Examination in the subjects then required by the Medical Council of Great Britain.

(2). The period of medical study, after matriculation, to be extended to four years.

(3). A graded curriculum.

(4). Laboratory teaching as far as that could be made possible.

(5). A high standard for examinations, written, oral, and clinical.

That was in 1870. The ground taken by the founders of the Medical School at Halifax was in advance of that held by the Medical Schools of the United States at that date.

Every good feature adopted by the founders of the School forty years ago has been scrupulously maintained to this day. The only changes made have been in the way of progress—the Medical Course, then extended to four years, has since been extended to five years, the professional curriculum has been enlarged, the laboratory and clinical teaching have been increased, and the professional examinations have been made even more practical and thorough, so as to test a candidate's actual fitness for practice.

As the leading man in the organization and development of the school from 1867 to 1870, the Dean of the Faculty at that time, is with us here to-day, still hale and hearty in his happy old age—I refer to Dr. A. P. Reid, and as Dr. Reid's career displays some points of considerable interest, I am sure you will allow me here a brief paragraph thereupon in passing.

Born in Ontario 76 years ago, Alexander Peter Reid graduated in Medicine from McGill in 1858; pursuing post-graduate studies in Edinburgh, London, Paris, and at the Rotunda Hospital, Dublin, he returned to Canada, and started practice in Huron County, Ontario. Shortly afterwards he undertook an expedition and crossed the Continent overland on British territory, to British Columbia. From here he passed down the Pacific coast to Oregon, and here served for a short time as a surgeon to a volunteer force in a war against the Indians. Continuing South he reached Mexico; and from Mexico found his way to New York, where he studied for a winter at New York University. Coming then to Nova Scotia, he practiced for a time in Guysboro, but soon after removed to Halifax and became the Dean of the Medical School. His subsequent career is familiar to you all, how that, successive-

ly he served most acceptably, as superintendent of the Nova Scotia Hospital, the Superintendent of Victoria General Hospital, and, lastly, as Secretary of the Provincial Board of Health, in all of which he has done valuable work for the public.

Some more special notice should be made of some others who took part in the organization of 1870; but time presses.

In 1875, for financial reasons and to secure more commodious quarters, especially for Anatomy work, the Medical School became separately incorporated as the Halifax Medical College, with degree conferring powers, and erected the new building on College Street.

The College then affiliated with the new University of Halifax, and students were at liberty to take the examination of either the College or the University. All the students of that period, however, took the diploma of the College; and one gentleman who took the examinations and diplomas of both, subsequently obtained degrees in Medicine and Surgery in Britain; and is now one of the leading surgeons of this Province.

In 1885, the University of Halifax, having become inoperative, the College was again drawn towards Dalhousie, but for financial reasons an open affiliation with the University could not be maintained. Dalhousie organized a full medical faculty, and undertook the teaching of the science subjects of the medical course, while the Halifax Medical College devoted itself entirely to the teaching of the strictly medical subjects. The two together *have* provided a very full and effective course of training for medical practitioners; the College having practically ceased conferring degrees, while Dalhousie has become the examining and degree-conferring body.

The present arrangement between the College and the University is working very well for all concerned, the public included; but it has its objections and just as a few years ago the McGill Medical School became an integral part of McGill University, so it is not unlikely that, before very long the Medical School at Halifax may again become an organic part of Dalhousie as it was at the beginning and should always have remained.

But of all such facts regarding the history of the College, and of its real aim and ideals, the able and expert delegates of the Foundation remained profoundly ignorant.

Another unfortunate result of the extreme brevity and hurry of their visit was that they evidently learned nothing about the constitution and practice of our Provincial Medical Board. There is, indeed, not

a single line in their report to indicate even the existence of such a Board.

Yet this body of experts and censors regard properly constituted State Boards as lying at the very foundation of a sound system of medical education, and as "the instruments through which the reconstruction of medical education will be largely affected." (see p. 167).

But if the delegates had made proper inquiry and had learned the truth, they would have discovered that the Provincial Medical Board of Nova Scotia has a constitution embodying every feature which they themselves set down as necessary and desirable.

At page 171 of the bulletin we read:

"A model state board must therefore guard the following points: the membership of the board must be drawn from the best elements of the profession, including—not, as now, prohibiting—those engaged in teaching; the board must be armed with the authority and machinery to institute practical examinations, to refuse to recognize unfit schools, and to insist upon such preliminary educational standards as the State's own educational system warrants; finally, it must be provided either by appropriation or by greatly increased fees with funds adequate to perform efficiently the functions for which it was created. The additional powers needed in order to deal effectively with the practice of medicine, lie outside the present discussion."

If the delegates had made due inquiry they would have found that the Provincial Medical Board of Nova Scotia possesses all the legal authority here set down as necessary to a "model board," including the "additional powers," and that, in practice, the Board exercises all its authority as to preliminary education and professional education, and further, that it uses its "additional powers" so as "to deal effectively with the practice of medicine," and to such good purpose that we have few if any unqualified practitioners, and "medical sects" are unknown in this Province.

The state boards with which the delegates are familiar are evidently of a very different character; for, at page 170 of the bulletin, we read:

"One or two of the States have latterly begun to introduce certain practical features into their examinations."

On the other hand, the professional examinations of the Provincial Medical Board of Nova Scotia are conspicuously practical—written, oral, and clinical—dealing with the subjects of the fourth and fifth years in such a way as to test thoroughly the fitness of the candidate to engage in the practice of medicine.

If the delegates had duly inquired into the constitution and practice



of the Provincial Medical Board they would have found that Medical Education in Nova Scotia is on a perfectly sound and safe basis.

In concluding this part of my subject let me call your attention to the fact that, so thoroughly satisfactory is the Nova Scotia system of Medical Education, the General Medical Council of the United Kingdom has agreed to Reciprocity in Registration between this Province and Great Britain.

The requisite acts of Parliament having been previously passed, the General Medical Council, in May, 1907, adopted a resolution to the following effect—the exact phrasing being somewhat abbreviated:

“That any person who holds the degrees of Doctor of Medicine and Master of Surgery of the Dalhousie University, or of the Halifax Medical College, or who holds the Diploma granted after examination by the Provincial Medical Board, and is at the same time duly registered in the Medical Register of Nova Scotia, shall be entitled to be registered in the Colonial List of the British Medical Register, and shall thereby become equally entitled to the same privileges as persons registered in the regular Home Register.”

This includes the right to practice in Britain and in certain other colonies and countries, and also gives admission to the army and other medical services.

It may not be pleasant for us to fall under the condemnation of the Carnegie Foundation delegates after a four hour visit, but we are not entirely without friends, and need not feel either cast down or dismayed.

Respecting the future of the Halifax Medical College, something further, however, remains to be said.

The Carnegie Foundation has indeed moved for its prompt abolition, but I do not suppose than any person in this Province would think, for a moment, of seconding such a motion, unless, indeed, merely for the purpose of giving formality to a discussion.

In any such possible discussion I would briefly note the following points:

(1) The territory to be specially served by the Halifax Medical College comprises the three Maritime Provinces of Canada and the Island of Newfoundland—a region of far greater area than that of all the New England States, and with a population of about one million and a quarter, or about one-sixth the population of the Dominion; and in this region the present proportion of medical practitioners is one to about twelve hundred.

(2). The Carnegie Foundation itself recognizes the desirability of

local Medical Colleges, with a view to serving the needs of special territories. At page 145 of the bulletin we read:

"A reconstruction of medical education cannot ignore the patent fact that students tend to study medicine in their own States, certainly in their own sections. In general, therefore, arrangements ought to be made, as far as conditions heretofore mentioned permit, to provide the requisite facilities within each of the characteristic State groups. There is the added advantage that local conditions are thus heeded and that the general profession is at a variety of points penetrated by educative influences."

(3). The Foundation in fact admits that Halifax is a proper place for a medical school, for at page 150, it is declared: "At some future time doubtless Dalhousie University will need to create a medical department"; yet the Foundation now absurdly asks that Dalhousie should destroy what she now has in herself and in virtual affiliation with herself, before setting about building up a new school.

(4). All the reasons that called for the inauguration of the school, in 1867 and 1870, still exist and demand its continuance.

(5). It is entirely proper, if not imperative, to consider the reputation and interests of all the 211 graduates of Dalhousie and the Halifax Medical College, now living and practising not only in Nova Scotia but in many other countries. It is indisputable that Dalhousie and the College are now better able to give a thorough medical training than ever before. If, therefore, the College should now be abolished at the instance of the Foundation, it would be a declaration to the world that the medical education heretofore provided at Halifax had been comparatively worthless—a declaration that would not only be grossly unfair to all the living graduates, but would also be positively untrue.

(6). Nova Scotian Degrees in Medicine have already attained such standing and recognition in the British world at least, that it would be sheer folly to do anything tending to jeopardize or forfeit their value.

(7). We shall more readily attain the best results in Medical Education by going on to improve what has already been accomplished by nearly half a century of faithful and intelligent effort, than we should by foolishly destroying a valuable existing institution, and then being compelled, as we should be at some future time, to start anew and build up from nothing.

And this reference to improvement brings me to the last topic upon which I propose addressing you to-day

Now, the first great improvement that is needed, not merely in the interests of Medical Education, but also and chiefly in the interests of Public Health, is the organization and establishment by the Provincial Government, of an ample, thoroughly equipped, and well-manned Pathological Institute.

The present condition of the Laboratory used by the Provincial Pathologist is not sufficient to deal with the ever growing needs of the Public Health of the Province.

The present facilities for Clinical Pathology at the Victoria General Hospital are entirely inadequate.

The work already accomplished by the Provincial Bacteriologist at the Laboratory of the Halifax Medical College is about all that could be done with the present equipment by a man who is not so adequately paid by the Province as to be able to devote his whole time to the work; but the public needs and demands of the Province are constantly increasing.

Hence improved accommodation and equipment, with facilities for research work, are, from the point of view of the public health alone, simply indispensable.

The immediate needs are : (1) A new building specially designed and adapted for this work; (2) Ample equipment for the doing of all such work as engages attention in a modern and well-provided Pathological Institute; (3) This new institution should be presided over by a thoroughly trained and first-class pathologist, devoting his whole time and energies to the work, with an adequate salary, and with a sufficient corps of assistants.

This forward move is demanded, moreover, not only by the increasing needs of the public health, but also by the needs of the Hospitals in the various Provincial towns, and especially by the needs of the Victoria General Hospital.

Such an institution could be so utilized as to afford considerably increased facilities for laboratory work in medical education; and the Halifax Medical College has some substantial right to ask such assistance at the hands of the Government, in view of the fact that for the past ten years the laboratory of that College has really been supplying the place of such an institution for the benefit of the whole Province.

The many and varied services of the medical profession of the city and Province for the promotion of the Public Health which, as was said by Disraeli, is "The great concern of statesmen," may also well be considered to entitle them to ask some such recognition at the hands of the Government.

While the Government is now very properly doing much for Technical Education, is it not proper that it should also do something for Medical Education, and at the same time provide indispensable help for the conservation of the health of the whole Province, and especially to afford most material and greatly needed assistance in fighting the Great White Plague.

A fully equipped Pathological Laboratory, under the superintendency of a thoroughly trained man, affords most valuable assistance to the practitioner in both diagnosis and treatment; but "perhaps even more important than its services to curative, have been the suggestions of bacteriology to preventive medicine;" and preventive medicine is a matter to engage the special attention and care of governments.

There is ample room on the Victoria Hospital grounds for such a buildings as would be required, and a first-class laboratory there would be convenient to meet the needs of both the Hospital and the Medical College.

For his highly meritorious services in conserving the Public Health and promoting Medical Education, I desire to mention the name of one man whose memory is deserving of a high tribute from both the profession and the Government—I refer to the late Dr. Edward Farrell, "a man in civic action warm," who came to an early grave through over-devotion to the public service.

When the Provincial Government establish such a Pathological Institute as I have shown to be indispensable, they will perform a graceful and proper act if they give it the name: "Farrell Pathological Laboratory."

Mr. President and Gentlemen, I have to thank you for the patient hearing you have given this rather long address.

I trust I have afforded you some assistance in measuring the value of this Carnegie Foundation report; in judging the character of the strictures against the Halifax Medical College and Medical Education at Halifax; in seeing the folly there would be in suffering such ill-founded criticism to have any destructive effect on the College; in appreciating the fact that Medical Education in Nova Scotia is on a sound and safe basis; and in recognizing the urgent need of a new and thoroughly equipped Pathological Laboratory, in the interests of Public Health, and of Medical Education.

If our work is to endure we must make it fit to endure.

#### DISCUSSION.

Dr. John Stewart said: I think that Dr. Campbell's carefully prepared paper demands the serious consideration of this Society. I think

we all feel that he has shown very clearly that the estimate made of the Halifax Medical College by the Carnegie Foundation is a very unfair one, very misleading, and influenced by prejudice. To my mind the keynote to the nature of the report lies in the word "mercenary." The use of such a word in describing the founders or the teachers of the College is simply unjust and entirely uncalled for. Who, for instance, that knows him, can attribute mercenary motives to Dr. A. P. Reid, or indeed any of those who founded and fostered the College. They certainly gave more than any pecuniary return has given them.

Nothing but prejudice, or gross ignorance of the history of the College could lead to the use of so offensive a term.

The friends of the College do not think of claiming rank with the foremost medical schools; what they do claim is that the College gives a sound and efficient training in medicine, and they can justify their attitude by pointing to the many graduates of the College now practising successfully, and holding honourable positions not only in the Maritime Provinces and Newfoundland, but in Western Canada and abroad.

I believe this Society, numbering as it does many graduates of the College, has confidence in the College, and considers that it supplies a need in these Eastern Provinces.

The gentlemen who report so unfavourably on the College comment on our limited laboratory facilities. Well, we should like more apparatus, but so does every laboratory. There is always something more wanted. And it is the man more than the laboratory that makes for efficiency. There were no pathological laboratories when Lister developed antiseptic surgery; Koch, a country practitioner in a lonely Prussian village, had no laboratory but what he could construct himself. Trudeau, alone in the Adirondacks, demonstrated the main facts in our knowledge of tuberculosis.

The hospital facilities are quite sufficient for the number of the students.

I think it would be a good plan for all the graduates of the Halifax Medical College, who naturally resent this ill-informed attack on their school, and who must feel that the good character of their degree is called in question, to form a league or society to aid in the continuance and efficiency of the College.

Dr. Birt, Halifax, ventured an opinion on one point only. He thought, since he was neither a native of the province nor a graduate of the Halifax Medical College, and since his connexion with the teaching staff was so recent, that he might be assumed to be a fairly unbiased critic. His 23 years of professional life had thrown him in contact with men

holding a great variety of medical qualifications on both sides of the Atlantic—including most of the British and Canadian degrees, and those of many of the leading schools of the United States. On retrospect he did not think that, taken as a whole, the graduates of the Halifax Medical College suffered in comparison with the work of men who came from wealthier or more famous seats of medical teaching. He had found them, as a rule, excellent emergency men, alert and resourceful, and well up in diagnosis and modern therapeutics. Recognizing fully that there are weaker brethren holding the degrees of *every* school, he had not found these proportionately more numerous amongst the Halifax graduates than elsewhere.

Dr. M. Chisholm, Halifax, said that opposition to the existence of a medical school in Halifax disappeared many years ago. The success of the Halifax Medical College depended upon the thorough grounding students received in the primary subjects and the excellent clinical facilities afforded by the Victoria General Hospital. The number of students was never large, and questionable methods of attracting larger numbers had never been resorted to. It would seem as if the glamour of costly buildings had blinded the eyes of the Carnegie delegates.

Dr. A. J. Fuller, Yarmouth, dwelt especially upon the advantages of small schools where there was no disproportion between the number of students and the clinical facilities. He was satisfied that the Halifax Medical College had done good work and should be maintained.

Drs. Eagar, Halifax; Kennedy, New Glasgow; Webster, Yarmouth, continued the discussion.

A committee, consisting of Drs. Stewart, Webster, Chisholm, W. H. McDonald, and the Secretary, was appointed to prepare a minute in connexion with Dr. Campbell's paper, and later submitted the following, which was unanimously adopted:

"The Medical Society of Nova Scotia, in session at Yarmouth, July 6th and 7th, 1910, having considered Dr. Campbell's criticism of the Report of the Carnegie Foundation on the standing of the Halifax Medical College, finds that the Report is prejudiced, inaccurate and misleading.

"The Society considers that the best answer to the Report is furnished by the good standing and success of the practitioners who received their education in Halifax.

"The Society believes that the Halifax Medical College has proved its efficiency and that it serves a useful purpose in the Maritime Provinces and Newfoundland, and it strongly recommends that every effort should be made to ensure the continuance of a medical school in Halifax."

## SURGERY.

UNDER THE CHARGE OF DRS. ARMSTRONG, BARLOW, ARCHIBALD, AND CAMPBELL.

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HUNTINGDON, of San Francisco. "Bone Transplantation." *Annals of Surgery*, February, 1905.

A case report in which a defect of the whole shaft of the tibia was replaced by a corresponding portion of its companion fibula.

Nichols in the *Journal American Medical Association*, February 3rd, 1904, is referred to as an able discussion on the subject. Nichols reported eleven cases which demonstrated how, in many instances, especially where the defects were of minor dimensions, when the periosteum was preserved, there was complete reproduction of the bone with the attainment of satisfactory results as far as weight-bearing and function were concerned. Two cases occurred where almost the entire diaphysis of the tibia, in one of which after four months almost complete regeneration had occurred, but in the second there was functional failure after several years.

No reference is made to the work of Ollier, of Lyons, on sub-periosteal resection which I think is very suggestive though written many years previously.

Huntingdon, on undertaking his case, recognized that a central segment of the fibula, firmly fixed to the tibia at both ends by bony union, would carry with it its own nutriment supply, and that this would be greatly increased by the more generous nutrition of the host. Assuming this as fact, he reasoned that the bridge of fibula thus formed would rapidly expand and in reasonable time approximate the dimensions of the larger bone, thereby insuring a satisfactory condition as regards weight-bearing. Another important factor was that the important relations of the lower extremity of the fibula were to remain undisturbed, *i.e.*, the integrity of the ankle joint would be preserved and locomotion be unimpeded.

He then cites his case of a patient, aged seven years, suffering from an extensive osteomyelitis of the tibia. The diaphysis was resected, and having in mind the reproduction by the periosteum this was sewn into a tube. After three months the wound was healed, but three months later there was still a gap about five inches in the shaft of the tibia, and the leg hung flail-like and could not be extended.

He then determined to bridge the gap with a portion of the fibula, and sawed through that bone at a point opposite the lower end of the upper tibial fragment and attached it thereto. This was easily done, and

the divided end of the fibula was firmly implanted in a cup-shaped depression in the stump of the tibia.

This operation was performed the end of January, 1903. In September, 1903, the patient walked well with the help of two lateral splints as a support to the ankle joint owing to a tendency towards eversion of the foot.

In October, in order to better establish the balance of the foot, a second operation was performed on the lower end of the fibula to the lower fragment of the tibia. This gave the solidity required, and was an excellent result. The radiogram in the article shows the fibula to have developed practically to the size of the tibia of the other leg, and the patient plays games just as other boys, the only present functional defect being the bowed leg and  $\frac{3}{4}$ -inch shortening.

As an object lesson, the writer would keep the leg at rest between the two operations and thus avoid the bowing of the fibula and the slight eversion of the foot.

Photographs and radiograms accompany the article.

The second article is by T. S. Stone, Boston. *Annals of Surgery*, October, 1907. He reports a similar case to that of the previous writer, and the first stages were carried on identically. After eleven weeks there was moderate union which was quite solid two months later.  $5\frac{1}{2}$  months after the first operation the patient was again operated on, and in this case the lower end of the fibula was fully exposed and then carefully split, the periosteum being first carefully incised to prevent stripping it from the bone. The two fragments were then carefully sutured into the main shaft near the former junction of the upper part of the fibula and the lower part of the tibia. The result corresponding to that of Huntington's case.

[Codman in *Annals of Surgery*, June, 1909.]

A report of a case almost identical with the preceding. In this case there occurred union between the lower end of the fibula and the united tibiofibular shaft, *per se*, without the second operation.

All three reports demonstrate the rapid development of the new shaft to fulfil the functional demand, and the preservation of the ankle joint allowed for the proper balance of the foot.

The previous articles, and having recently seen some of Carrel's work in the Rockefeller Institute suggested the review of some very interesting articles by Lexer, of Königsburg, on joint-ankylosing and joint-transplantation.

Three are referred to:



Lexen—Archiv. f. Klin. Chirurg. Vol. 86, part 4; Med. Klinik. Vol. XXII, 1908; Zentralblatt f. Chir., Aug. 20, 1908.

The first is extracted as being very suggestive.

The observations were taken from a variety of cases.

1. Skull defects.
2. Facial bone defects, *i.e.*, saddle nose, etc.
3. Lower jaw defects.
4. Pseudarthrosis.
5. Ankylosing paralytic joints.
6. Long bone defects.
7. Joint transplantation.

His first work was in taking portions of bone with periosteum from bodies, the portions being boiled for 24 hours. His results were not satisfactory, resorption taking place and gradual breaking down.

His next work was transplanting portions of fresh and living bone. In these cases he removed the bone with the periosteum and carefully sutured it to correct the defect. He found that after the transplanting for a time there was fever, and some discharge from the wound, but he was not able to get any culture from the same nor establish any infective as the cause of the constitutional disturbance. Union proceeded undisturbed. In skull defects, as a result of trauma, he transplanted periosteal bone flaps from the tibial epiphysis of a freshly amputated leg. After discussing the plastic methods for correcting saddle nose and lower jaw defects, he cites a case of transplanting a large portion of the tibia to replace a portion in the tibia of a patient where resection had been performed for sarcoma. After seven months the patient was able to stand and walk well, though with care.

Three other cases where transplanting has been carried out successfully in long bones are given with the histories.

#### Joint Transplantation:

Two cases were operated upon for ankylosis of the knee. In one the ankylosis resulted from suppuration, the other from a healed tuberculosis. In each case the joint was resected, and when the leg was extended a defect to the extent of three finger breadths was present. A joint was then resected from a freshly amputated extremity, and this was implanted in situ. In the one case it was held in place by means of nails, in the other by means of wire. After three months union was firm and active, and passive treatment was carried out. There was no pain on walking or standing. In the first case there is free movement for 45°.

He then discusses his methods, and closing with stating the necessity, in all bone plastic work, to have fresh material for the transplanting,

and naturally the material not to be taken from any infected source. *Medicinische Klinik*, 1908.

The same author, the article being written previous to the above. He divides his subject into three:

1. The transplantation of a half joint.
2. The transplantation of both epiphysis with their cartilages.
3. The transplantation of the entire joint apparatus.

The last has been described above.

He has several times performed the other methods with good results. After resecting the joint or a portion of it, he inserted the new portion of a joint from a freshly amputated limb and held it in place either with nails or by means of wire. The supplying patient in two cases had senile gangrene. By means of the X-ray, and in two instances by subsequent operation, he found that the grafts had lived and the bone was firmly united to the shaft. In several patients he achieved joints with motion ranging from fair to good. He does not state actual amount of movement. The patient must be under control for a long period of time.

The experiments which he carried out on lower animals did not result in as good results as in the human.

W. G. T.

## Society Proceedings.

### MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The sixteenth regular meeting of the Society was held Friday evening, May 24th, 1910, Dr. W Grant Stewart, President, in the Chair.

#### DISLOCATION OF SEMI-LUNAR CARTILAGE OF KNEE JOINT.

J. ALEX. HUTCHISON, M.D.—The man is aged 24, and was admitted to the Montreal General Hospital on April 7th and discharged on the 28th. The diagnosis was dislocation of the semi-lunar cartilage of the right knee joint. The condition was brought about by playing lacrosse, and as a result of the injury, almost three years ago, he had from time to time sudden fixation of the joint, with pain, and before the leg could be straightened it had to be pulled out. The usual incision on the inner side of the joint was made and the cartilage removed carrying the point of the scissors as far back as possible. Recovery was uneventful, and the man has now perfect control of the limb and is doing a little running as he is anxious to take up lacrosse again.

#### STREPTOCOCCUS MUCOSUS, FROM CASES OF SUPPURATIVE OTITIS MEDIA.

H. S. MUCKLESTON, M.D., read this case report.

H. S. BIRKETT, M.D.—We are indebted to Dr. Muckleston for the

trouble he has taken in collecting so interesting a group of cases as we have had here this evening. This group represents a series of cases which hitherto we have regarded as being rather sparse in literature, but here, in the space of two years, we have been able to collect no less than nine cases. It further emphasizes the importance in my mind of keeping watch on even an ordinary acute catarrhal otitis media, particularly where we find the condition limited to the posterior and upper part of the drum head. Puncturing the drum head with the idea of taking a culture should not be lost sight of, should these cases prove as numerous as they seem to be. The mastoid symptoms are certainly very insidious, and I would not wait, with the knowledge we have at the present time, for the definite mastoid symptoms which present themselves in these cases. In one fatal case in which I was interested the explanation of the mode of infection is very plausible, and I think the suggestion made by Dr. Muckleston makes is practically clear to me.

R. H. CRAIG, C.D.—Several very interesting cases of streptococcic infection of the middle ear and mastoid process have come under my observation during the past few months.

When the culture reveals a pure streptococcic infection, one must be on the qui-vive for intra-cranial complications. The advisability of early incision of the drum membrane in all cases of acute otitis media with bulging of the drum, cannot be too strongly emphasized.

I had occasion to operate upon a boy about fourteen years of age, who was suffering from typhoid fever associated with acute mastoiditis. He apparently made a good recovery from the typhoid and aural condition, and was discharged from the hospital. Two months later he appeared at the General Hospital suffering from double optic neuritis and all symptoms of intra-cranial involvement. Dr. Armstrong operated and found a large abscess in the temporo-sphenoidal lobe.

This case was interesting as apparently showing the late intra-cranial involvement, and the large amount of pus evacuated at the time.

I would like to ask Dr. Muckleston whether the blood was examined in his cases.

According to latest authorities, this has proven a valuable aid in the diagnosis and prognosis of such cases.

#### SOME FORMS OF TREATMENT ILLUSTRATED.

A. MACKENZIE FORBES, M.D., read the paper of the evening. This was illustrated by various apparatus and by living cases.—

J. ALEX. HUTCHISON, M.D.—I would like to express my appreciation of this interesting point brought before us by Dr. Forbes. I saw Dr. Goldthwaite some months ago, and he spent considerable time demon-

strating to me his X-ray plates and sketches from life, together with patients present at the time, illustrating his theory of stoop shoulder and throwing forward of the head and neck, and confirmed by the use of bismuth taken through the mouth. He applies just such an apparatus as Dr. Forbes has presented, and I saw several of his patients under treatment, one case in particular in which the first plate showed the stomach down, occupying the pelvic space.

G. A. BROWN, M.D.—I have treated about 20 cases of enteroptosis and I have found that a great many of them have had long sloping waists. Thinking that some of them might be tubercular I have tested them, but failed to get any reaction. In this series of cases I cannot remember any case that had any trouble in their joints.

#### VICARIOUS HEMORRHAGE. HAEMATEMESIS.

W. W. CHIPMAN, M.D., read the report of a case of this condition.

A. LAPHORN SMITH, M.D.—These cases are very rare. In all my 32 years of practice I have only met with two that I was sure of. They were all hysterical old maids with small uteri and great abundance of fat. The two cases were cases of coughing up bright red frothy blood regularly every month for three or four months. I put them on treatment for increasing the flow of blood to the uterus and it was effective in both cases. One case, which I could not vouch for, was that of a girl who claimed she had a bloody sweat every month from her chest, but I never saw it. I think we must view these cases with a great deal of scrutiny because they are all hysterical.

A. C. P. HOWARD, M.D.—A young girl, about 14 years of age, came to my clinic at the Montreal General Hospital, with symptoms of chlorosis. The examination was negative except for quite an extensive ecchymosis into the upper and lower eyelids of one eye. The mother stated that this had occurred with the three previous menstrual periods. At that time I had never heard of vicarious menstruation into the eyelids, but upon looking up the subject in the index catalogue I was surprised to find four or five similar case reports.

WESLEY MILLS, M.D., said he thought such cases as the one Dr. Chipman had reported were very interesting as illustrating the law of rhythmicity of such wide application in biology and physiology. The cessation of menstruation during the winter months suggested hibernation. He had known of a few cases not unlike hibernation in animals in the human subject. In one case, that of a man, there was a sort of hibernation during the winter months. In hibernation the whole metabolism was profoundly altered, and no doubt there must be great changes in these cases of failure of menstruation during a special season of the

year. While there was no proof that the blood, in Dr. Chipman's case, came from the stomach, Dr. Mills would not absolutely on this account rule out that organ. The stomach was in a very different condition when not in functional activity, and under the peculiar conditions of this case it was not inconceivable that it ceased for the time to be a stomach in the physiological sense.

The seventeenth regular meeting of the Society was held Friday evening, June 10th, Dr. W. Grant Stewart, President, in the Chair.

#### PATHOLOGICAL SPECIMENS.

W. S. BAIRD, M.D., showed the following specimens:

- 1.—Spleen and glands from a case of lymphatic leukæmia.
- 2.—Heart and pericardium in acute plastic pericarditis.
- 3.—Carcinoma of the fundus of the gall bladder with metastases in the liver; clinical history indefinite, autopsy revealed condition.
- 4.—Stomach and liver showing carcinoma of the lesser curvature and glands with metastases in the liver.
- 5.—Specimens from a woman, five months pregnant, dying of condition diagnosed as eclampsia. At autopsy acute cerebro-spinal meningitis found of pneumonic origin; acute encephalitis; anomalous spleens nine; anomalous attachment of intestines,—ascending colon and small intestine having one mesentery; kidneys only showed acute hydronephrosis; nothing to account for albumin in urine.
- 6.—Specimens from child of ten weeks, intensely jaundiced; congenital obliteration of bile passages; pancreatic duct intact and opening into duodenum; no bile ducts.

A. C. P. HOWARD, M.D.—The clinical history of this case of congenital atresia of the gall-bladder and ducts was briefly as follows: The infant was separated from its mother during its first week of life on account of a maternal puerperal infection. When the mother saw her child again it was deeply jaundiced and gradually failing. She brought it to the General Hospital where an examination revealed a cachectic infant with pronounced icterus, intensely bilious urine and whitish stools,—more resembling white lead than anything else. Though there was no history of lues, a Wasserman reaction was tried, but proved negative. The cause of the icterus neonatarum was not cleared up until autopsy. This condition is rare, though in 1892 Thomson collected 50 cases from the literature.

W. S. BAIRD, M.D., showed for Dr. Elder a humerus from a case of recurrent carcinoma of the breast showing metastases; a cyst of the

rain which was found by chance at autopsy in a case which was found later to have had a history of epilepsy; and a case of mucous degeneration of the appendix.

J. M. ELDER, M.D.—The appendix specimen looked exactly the shape and appearance of a fish's bladder, one of these cases which have been described in articles on the appendix as a cystic appendix. The man gave a history of recurrent attacks of catarrhal appendicitis, and he was sent into hospital to be operated on for this condition.

With regard to the humerus, this was a rather interesting case, and I reported it at the Toronto meeting. I have another one in the hospital now with a metastasis in the tibia associated with recurrent carcinoma. The woman from which this specimen was obtained came into hospital two years ago to have her breast operated upon; it was decided, however, by the surgeons that it was inadvisable to do anything. She then went to another hospital, and some attempt was made to remove the growth. The reason of her going into hospital at this time was that she had slipped on the floor, and we could make out that the thigh had given way, and she had a subtrochanteric fracture of the femur. Upon examining her we found that the left arm was one of these enormous brawny lymph arms which often follows recurrence of these carcinomas, and upon examining this arm we found that apparently there was a fracture of the humerus. It gave her no pain and was well splinted with the huge brawny arm, and she did not know it was fractured at all. The question arises, is there any hope of union of bone in these cases? I tried to put on some extension on the femur in this case, but on account of the empyema she could not have the foot of the bed raised, and we could not get the extension to work at all satisfactorily. However, there was good union, though malposition. We therefore came to the conclusion that when one gets spontaneous and accidental fracture in these cases that one may expect to get union. She died in hospital with a diagnosis made by myself of recurrence in the mediastinum, and at autopsy a large empyema was found. On looking up the literature I find that a great many of these cases go that way, and that most of the so-diagnosed conditions of mediastinal recurrence are really pleural empyæmas.

#### PANCREATITIS, ACUTE, SUB-ACUTE, AND CHRONIC RECURRING FORMS OF THE DISEASE.

E. W. ARCHIBALD, M.D., read the paper of the evening.

J. M. ELDER, M.D.—I wish to congratulate Dr. Archibald and the Society upon the presentation of this most interesting paper. He has presented the case very thoroughly and very scientifically, and I am quite at one with him when he says that many cases that have been put

down to gastric irritation, acute indigestion, etc., are of this nature. I saw a case to-night in which I made a provisional diagnosis of pancreatitis, following the lines which Dr. Archibald gave some two years ago. Tenderness is a much more important symptom than pain. The first picture is that of intestinal obstruction high up. I am very glad Dr. Archibald has come round as to the usefulness of doing a cholecystostomy and draining the bile ducts. Undoubtedly, until some one is able to offer something better I think we are justified in draining the gall bladder. I would like to make the statement that until you have opened the gall bladder and got some bile I do not see very well how you can find out if obstruction is present.

A. E. GARROW, M.D.—I should also like to congratulate Dr. Archibald on the excellence of the paper which he has presented to-night, particularly with respect to the importance of attempting to recognize the latter two conditions, those of subacute pancreatitis and the chronic, and with these the recurrent forms. It seems to me that the chief difficulty lies in the recognition of these two. I do not think there is much difficulty in recognizing the fulminating forms, and particularly those associated with hæmorrhage. Personally, I have been inclined from a clinical point of view to divide the very acute forms into two types, each of which I had an opportunity of reporting to the Society this year; first, those in which the symptoms are shock and collapse and not infrequently, as in two of my cases, with a very rapid pulse, subnormal temperature, and all the symptoms of shock after colicky pain; and second, a type of acute intenseness associated with some fever and abdominal pain. The diagnosis of the other two types, the subacute and the recurrent forms, is only made when the abdomen is opened and the pancreas felt. It is quite true that in many of these cases, particularly if you see them during the acute exacerbation, that you may be able to map out with a good deal of exactness the tenderness which evidences the swollen and tender pancreas, but frequently the patient comes in towards the terminal stage of the attack, and one has got to depend very largely upon the history to corroborate the statement that the pain is apt to radiate into the left shoulder. I have looked for that symptom but have never been able to get one patient to acknowledge that as we find the pain radiating into the shoulder in an attack of cholecystitis.

The treatment of the acute attacks: It has been my fortune to meet with several of these very acute cases not associated apparently with bladder or bile duct infection, and even after opening the gall bladder and draining it the question was, what should I do with the intensely swollen and engorged pancreas, and in the last two or three cases I have

made a free incision into the lesser sac of the peritoneum, preferably between the stomach and the transverse colon and the gastro-coelic omentum, and incised the capsule of the pancreas, carried in a large tube down to that and sutured it there so that it would not get displaced. A symptom of great importance is in opening the abdomen in these obscure cases when possibly necrotic fat is not noticed, the first symptom which will point to the trouble is the blood-stained fluid. This physical sign is not a very common one, and when one does meet with it in an exploratory operation for an acute condition, it is always well to think immediately of acute pancreatitis. I have, during the past two years, since reading an article on the use of protopin, been using it, and quite recently, this year, where there was unquestionably gall stones, and in addition definite evidence of pancreatitis the patients have developed attacks while using it. I must confess that in the treatment of the sub-acute and chronic forms, where the abdomen has been opened for diagnosis, I have drained the gall bladder, since both Robson and Moynhan have advanced the procedure, and it seems to me to give better results than any other treatment.

F. R. ENGLAND, M.D.—I would like to ask Dr. Archibald if he has been able to locate an impacted calculus at the ampulla of Vater. Mayo Robson, several years ago, drew attention to the anatomical differences which may exist at the termination of the common bile and pancreatic ducts. He pointed out how, under certain conditions, a calculus might block the distal end of the ducts in such a way that the biliary secretion would be forced along the pancreatic duct setting up an acute pancreatitis.

If an obstructing calculus could be located in the ducts the rational surgical procedure would naturally be to cut down at the point of obstruction, opening the duodenum or otherwise, and, if possible, remove the obstruction.

A. E. GARROW, M.D.—I would like to ask Dr. Archibald if in his cases of acute and chronic pancreatitis he has noted the development of glycosuria. Robson and others have referred to the comparative frequency with which this condition appears in these cases. So far as my own experience goes I have not seen any.

E. W. ARCHIBALD, M.D.—In answer to Dr. Garrow's question, I would say that I have not found glycosuria except in one patient in whom there was probably sclerosis of the organ, not only of the parenchyma but of the islands of Langerhans. In several cases I have found calculi impacted in the ampulla of Vater, causing damming back of the bile. In one case of cancer of the pancreas it was demonstrated



that the bile had been forced back into the duct of Wirsung, causing a subacute pancreatitis. Walling off of the pancreas by gauze in the operation for acute pancreatitis is the proper procedure in the general opinion, as it may prevent to some extent a peritonitis.

**DEMONSTRATION OF THE TETER APPARATUS FOR NITROUS OXIDE  
OXYGEN ANÆSTHESIA.**

F. W. NAGLE, M.D., of the Royal Victoria Hospital demonstrated this apparatus.

**SARCOMA OF THE VERTEBRÆ.**

Dr. Turner read the case report of this case, and called attention to the course of the condition and its resemblance to a general tubercular infection, except for the temperature chart.

A remarkable specimen was presented with the report, in which the primary tumour appeared to have been in the coccygeal region with metastases involving the left sacro iliac joint, the lumbar and dorsal vertebrae and extending out along several of the ribs on each side; the periosteum in these last being alone involved.

Microscopical sections showing the condition to be alveolar sarcoma were also exhibited.