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CANADA
MEDICAL & SURGICAL JOURNAL

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ADDRESS DELIVERED AT THE OPENING OF THE
SUMMER SESSION CLINIC FOR DISEASES OF
THE NERVOUS SYSTEM, MCGILL UNIVERSITY,
APRIL 14TH, 1885.

By HENRY HOWARD, M.D.

Gentlemen,—Your professor, and my esteemed friend, Dr. Stewart, kindly invited me to give the opening lecture to his summer session clinical course on diseases of the nervous system. I consented to do so with great pleasure, because I know he will treat his subject from the standpoint of a physical scientist, the only point from which any of the diseases of the human frame can be treated scientifically.

Yesterday I received the *American Journal of Neurology and Psychiatry*, one of the best edited journals on this continent, which contains the valedictory address of the Hon. Wm. Barns, past-President of the Society of Medical Jurisprudence and State Medicine, in which he says, reviewing the work of the past year :
“ At the fifteenth regular meeting of the Society, held in May, 1884, Dr. Henry Howard of Montreal read a paper entitled
“ *Why Lawyers and Doctors fail to agree.* Dr. Howard maintained that experimental philosophy was the only true basis
“ upon which to found all jurisprudence— all medical jurisprudence, all education, and all social order ; and that physical
“ science should be the beginning and ending of *all* education.
“ If penal codes were based upon it, the criminal would be tried

“ by nature’s laws for any offence against social order, and, if
“ convicted, would be separated from Society as an abnormal
“ man that must be taken care of, both for his own sake and the
“ protection of society, and to return to society only on becom-
“ ing a normal man.”

I have quoted for you the foregoing that you may learn that any opinions that may fall from me while delivering this lecture cannot be stronger than those I have already expressed, and which have been already published.

When we treat of man in his normal state, we simply treat of organized matter and its phenomenon, organs and their physiology or functions. In fact, let us treat of nature as a whole, of which man forms an integral part, and we have nothing to treat of but matter and its phenomena. In the vast universe that, in truth, we possess so little knowledge of, there may be some other entity besides matter, if so be that matter be an entity and not a phenomenon; but we don’t know it—we cannot find it out by physical research. As physical scientists, we only know and treat of matter and its phenomena, things of the natural order, and of this, I regret to say, our knowledge is very limited. Strange that the subject which is of the greatest importance to man should be the subject, of all others, man knows least of. In all the past countless ages man seems to have considered it his first duty to try and find out the supernatural, and they are now as near to the attainment of their object as they were millions of years ago. Doubtless there is a supernatural. I believe myself, most fervently, there is, because natural presupposes supernatural; in other words, *cause* supernatural for *effect* natural. Physical science leads us thus far, but no further. We cannot treat of the supernatural by means of the natural order, therefore, as physicists, we have to treat of nature and nature only—that is, of matter and its phenomenon. Some believe that matter differs in kind. I only find that it differs in degree, and that it is indestructible; and in this I am in accord with the greatest physical scientists or experimental philosophers in the world. Judging the degree of matter by its phenomenon, the highest degree is the nervous system in man, and as this system itself

differs very much in degree structurally, so, consequently, must it differ in degree functionally, for all the varied functions of the various degrees of matter owe their functions to their structure, and alterations of functions must in all cases be preceded by alteration of structure. For example, the structure of the cornea, or glass of the eye, is transparent, and one of its functions is to transmit rays of light; but if this function is lost, if from disease the cornea is rendered opaque, then the function of transmitting light is lost. Motion is the function of muscular fibre, but if the motor nerve that supplies the muscle becomes paralyzed, the muscle, for the time being, loses its function.

Experiments on animals by vivisection, and the experiments that disease and accidents make on man, has proven that the grey or cortical substance of the brain is, more particularly, the structures of which mind is the function, although, in reality, there is no part of the nervous system which is not either directly or indirectly connected with the function of mind. Consequently I have given to the whole nervous system the term *materia cogitans*, or mind matter, or matter of the mind. Now mind may be an entity, or it may be in all matter, only we can't find it; we can only find it as phenomena of nervous matter, and where there is not nervous matter we cannot find mind. Therefore, when you ask me, as a physicist, what is mind, I must answer you a phenomenon of nervous matter. That is the language of physical science, and, unlike metaphysics, is at least comprehensible, or admits of being reasoned upon. The metaphysician may assume something else, but the physicist, as such, cannot admit of assumption; he treats only of the natural order, and only knows physical facts. Now, then, if you enquire of me, what is mind in the abstract? I answer you, I don't know; I only know it as a phenomenon of matter. What is force? A phenomenon of matter. What is sensation? A phenomenon of matter. What is consciousness? A phenomenon of matter. What is moticity? A phenomenon of matter. What is intellect? A phenomenon of matter. What is instinct? A phenomenon of matter. What is automatism? A phenomenon of matter. What is reflex action? A phenomenon of matter. What is con-

duct? A phenomenon of matter. What is electricity? A phenomenon of matter. What is that which we call life, in its three different degrees—dynamic in the mineral matter, biological in the vegetable matter, and biotic in animal matter? Physical science teaches us that even life is a phenomenon of matter. There may be life without matter, I don't say there is not. It may be an entity; I don't say it is not. I only say it is only demonstrable to us as a phenomenon of matter.

It is well, then, gentlemen, that when we come to treat of all, or any, of the different forms or degrees of all the different diseases that man is heir to, either by hereditary transmission, traumatism, or idiopathicism, that we only know matter and its phenomena, and of it only can we treat—that is, we only know man anatomically and the functions of his organs and tissues.

I must warn you now, gentlemen, that it has become fashionable—as fashionable as evil-speaking, lying, slandering and bank robbing—for the most immoral portion of society to hold up their hands with an assumed holy horror, and denounce the teaching which I have now given to you as sceptical, malevolistic, infidel, and irreligious. But don't you trouble yourself about what these people say. It is not a question of religion at all, and, believe me, you can believe all this that I have just said, as a physical scientist, and much more, and yet be honorable Christian gentlemen, or honorable gentlemen without the prefix Christian—Jews, for example, who are certainly as honorable as Christians.

There are others, good men, who, under the false impression that the natural is antagonistic to the supernatural, about which they know so little, protest against physical science, and would arrest us in our search of nature's laws. Mistaking sentimental conversation for religion, they will not even study physical science, afraid it should disturb their sentimentalism.

I would have physical science, or natural experimental philosophy, the basis of medical education. I would have it practically studied, by observation, from nature. I would have it the basis of law, order and civilization. I would have all men to know all they possibly could of nature's laws, and live in obedience to them. I would have the fact taught that all the so-

called sciences, if sciences at all, were physical sciences. I would have it taught that the very first principle of physical science was the fact that we had nothing to study nature from but matter and its phenomena; that is, material structures and their functions. That although matter was one, differing only in degree; that because of this difference, there were various structures, and consequently as great a variety of phenomena, I would have less books, and more observation, particularly in the education of youth, providing them with such a natural moral environment to draw their knowledge from, such as technical education provides, that the environment itself would cultivate their physical intellectual organization during the evolution or development of their intellectual organs.

If our social order was based upon nature's laws, and if we lived in accord with these laws, there would be but little occasion for either doctors or lawyers, because disease and sickness is due to a breach of nature's laws, and crime is the outcome of either teratological or pathological defect of organisms, from breaches of nature's laws. I would throw no obstacle in the way of any man in studying any of the arts, which I call also physical science, nor of language. But the standard of merit, if I admitted such a standard, in schools, colleges and universities, should be a knowledge of physical science or experimental philosophy.

You ask me would I interfere with the teaching of the supernatural. I have already said I believe in the supernatural, therefore, as a matter of course, I could not oppose its teaching; but I recognize that of necessity, while the two orders—supernatural and natural—are different, they are not antagonistic, and should not be made to clash.

And now, gentlemen, with your permission, I will turn to the nervous system. A vast subject, a truly grand subject, is disease of the nervous system—the one of all others which connects us with the physiology of the whole human frame; but a subject nearly, or I may say absolutely, impossible for any teacher to do justice to, or for students to derive much benefit from, unless the teacher has provided himself with plenty of abnormal living

material, and I vouch to you that your professor has taken good care to provide himself with an abundance of this material. I was agreeably surprised, I might say astounded, when visiting his dispensary, to see the number of cases he had succeeded in collecting, representing so many different phases of the diseases of the nervous system, both local or peripheral, and general or central, and in different stages of pathological defect. I even saw many in the different stages of teratological defect. I was particularly struck with the features of one imbecile boy, whom no doubt you in time will see, which caused me to turn to your professor and say, "These are the sort from whence come our criminal class of society." Now there are two things to possibly save such boys as that from becoming criminal fools: time and favorable circumstances, such as a good environment, while evolution is causing the development of the cortical substance of the brain, and all other portions of the *materia cogitans*.

In my making use of the expression agreeably surprised, I hope you do not for a moment suppose that it was, or is, a pleasure to me to find that a large portion of the human race are immoral criminal fools, and that because of teratological or pathological defect in some part of their *materia cogitans*. What I meant by the expression was simply that, knowing such to be the case, I was both pleased and surprised to find that your learned professor had succeeded in surrounding himself with so many of these cases, not only as a clinical teacher, but because of the benefit these creatures were receiving from what I saw to be scientific treatment.

True physical science, when applied to the treatment of disease, consists in our recognizing the fact that for physical effect there must be physical cause, and in our treatment of disease, our duty is, when we see effect, to look for cause. Treating disease from any other standpoint, no matter how successful such treatment may be, is empiricism—it is not science; and until this truth is recognized and acted upon by the medical profession generally, none of us can claim to be members of a purely scientific profession. The same reasoning, from the same premises, is equally applicable to the members of all other professions, and to none

more so than those of the legal profession, whose members cannot even comprehend justice or equity unless as physical scientists. Legislatures cannot make just and equitable laws, except as physical scientists, consequently we have such everlasting bungling and empiricism in the making of our laws, even the pitiful sight of law-makers breaking one law by making another. The law-maker, the administrator of the law, the lawyer, and the medical man, as well as he who cultivates the growth of a tree, or fashions a steam-engine, all equally alike must recognize the physical fact, and act upon it, that for physical effect there must be physical cause; to act otherwise is to act unscientifically and immorally.

No doubt, because of our ignorance of physical laws, we are sometimes, as it were, forced to empirical practice in our profession. Frequently, for want of knowing the cause of suffering, we render a person insensible by a dose of chloral or morphine. And can any one deny but that much of the practice of the present day of the gynæcologists is not empirical. How many cases of young girls more particularly, now treated for uterine diseases, never had that organ diseased. Hear what Dr. Wm. Goodell, of the University of Pennsylvania, says on that subject: "The crying medical error of the day is the mistaking of nerve disease for womb disease. From this widespread delusion it has come to pass that no organ in the human body is so over-treated and, consequently, so maltreated, as the womb."

Gentlemen, this sort of medical treatment is neither scientific nor moral. Here scientific morality, in the treatment of all diseases, consists in knowing the physical cause for physical effect, and this we never will know perfectly till physical science be made the basis of medical knowledge. I said scientifically, and have added the term morally, for moral conduct depends upon physical cause. What is conduct? We judge of every man by his conduct, and properly so; but how would we define conduct. Whether it be good or bad, what is it? It is simply muscular motion, for which there must be a cause. In other words, conduct, whether good or bad, moral or immoral, is the effect of a cause. Your clinical teacher will show you a para-

lyzed muscle, and he will tell you it is a badly-conducted muscle, because it does not perform its normal function. It is an immoral muscle ; it does not, because it cannot, obey the will, or cannot be controlled by the inhibitory function of the intellectual nerve centre. He will tell you that this muscle is an immoral, badly conducted muscle that cannot perform its normal functions, because the nerve that supplies it has lost its force, and discharges no force to the muscular fibre to cause these fibres to contract, so that the loss of nerve function causes a loss of muscular function. Here is the effect of a cause, and your clinical teacher, before prescribing therapeutical treatment for this case, or rendering a prognosis, will first search for the cause of all this troublesome effect, which he finds. He being acquainted with the general anatomy and physiology of the nervous system, knows that this paralyzed nerve may suffer from a pathological defect, in any part of its course, from one of numerous causes, either chemical or mechanical ; that it may be central, or that it may be local—that is, peripheral,—but wherever the lesion may be localized, lesion there must be, whatever be its nature, because there cannot be functional change without structural.

It is absurd to speak of any morbid or abnormal state of any portion of the human frame as merely functional. There can be no functional derangement without structural derangement, no matter how simple it may be ; but it is not necessary that we should find structural defect in the immediate locality of functional defect. For example, what we term dyspepsia is very frequently due more to cerebral than to stomach structure, and, on the other hand, some of the brain functions may be deranged through fault of stomach structure. Any peripheral irritation may cause derangement of the functions of the nerve centres, and any lesions of any of the centres may only develop itself through the medium of their peripherals. These are facts well known to every educated member of the profession ; but the trouble is to diagnose. Where is the structural derangement for the functional effect ? That is the question of questions in our profession. That is what you will, to a great degree, learn, in the course of lectures you are about to enter upon, on the

diseases of the nervous system. This is an education not to be got from books. You may be able to commit to memory a library of books, and yet not know the most simple of those nervous diseases when called upon to diagnose it. No, gentlemen, to diagnose these diseases you must learn from your observation of nature; even then, in very many of these obscure cases, you will only succeed in a true diagnosis by exhausting the negative, a practice very successfully resorted to by that recognized scientific neurologist, Dr. E. C. Seguin of New York.

I would next point out to you, gentlemen, that as physical science teaches us that all matter is one, only differing in degree and not in kind, so does it teach us that nature is one of which man forms an integral part, consequently man should learn of her, know her laws, and live in obedience to them above all things; that he should learn the fact that he who lives in the breach of nature's laws does so at his own risk, and is sure to bring upon either himself or his offspring her just punishment. Nature is no respecter of persons:—she makes no allowance, not even for ignorance. She inflicts sure punishment for the breach of her laws, not only to the third and fourth generation, but to the tenth and twelfth generation. If any knowledge would make man a moral man, this knowledge should do so, but, unfortunately, it has not. And why? Simply because the immoral man is a criminal fool, in virtue of some pathological or teratological defect in some part of his *materia cogitans*, no matter what may have been its somatic etiology. Every man's conduct is the outcome of the functions of his *materia cogitans*. If its functions be normal, the man's conduct will be normal, and he will consequently be a moral man, living in obedience to nature's laws, and delighting in his knowledge of them. If its functions be abnormal, his conduct will be abnormal; he will be a fool, and consequently an immoral criminal. The *materia cogitans*, like unto all other organic structures, has its peculiar functions, which functions are what the structures make them. If the structure be normal, the function will be normal and conduct normal. If the structure be abnormal, the function will be abnormal and conduct abnormal. We know a moral man by

observing his conduct and finding it in accord with his good environment, and we know his conduct is the outcome of force or phenomenon of his *materia cogitans*. So the immoral criminal fool shows what he is by his conduct, and we know that his conduct is also the outcome of the forces or phenomena of his *materia cogitans*. In the one case there is normal structure and function of the *materia cogitans*, causing right action. In the other case, there has been abnormal structure and function of the *materia cogitans*, causing wrong action. This is the ethical explanation of right and wrong. From a physical standpoint, morality and intelligence are the product of one; immorality and folly the product of the other. This is a law which governs all matter; all its phenomenon or force depends for its characteristic upon its mechanical and chemical structure, and the highest knowledge we can possibly attain to is the knowledge of matter and its phenomena. Matter in all its different degrees; phenomena in their numerous and varied forms.

As physical scientists, we cannot help recognizing that all criminals are fools, whether it be due, in each particular case, to teratological or pathological defect in the person's *materia cogitans*. If from pathological defect we term the person a maniac, if from teratological defect we term such a person an imbecile or fool, the fool or imbecile has never been anything else but a fool or imbecile, because of teratological defect; and his degree of imbecility will depend upon the deformity or teratological defect in his *materia cogitans*. If the imbecile be young, his *materia cogitans* may improve by growth and development, so that he may cease to be a fool, and grow up to be a moral man. But if he has outlived the age of development, and be an immoral criminal fool, such is he likely to remain to the end of the chapter, to be a curse to all whom he comes in contact with. Such fools are to be found in all the different grades of society, as society is graded. It is quite different with the insane or maniacal fools. They have lost something which they possessed—their intelligence; lost it by pathological defect in their *materia cogitans*. They should be treated with the most scientific care, with the object of restoring the abnormal organ

or structure to a normal state, after which there will be normal function and normal conduct.

There are many persons under the impression that because a man is what they term smart, that he is necessarily an intelligent man. Never was there a greater mistake. An immoral criminal fool may be, and very generally is, smart, clever ; and, indeed, it is necessary to be such to be a successful criminal. But all that does not give proof of intelligence, no more than does the memory of words. An intelligent man must necessarily be a moral man ; indeed the terms morality and intelligence are synonymous terms. Morality and intelligence are functions of the higher nerve centres in the cortical substance of the cerebrum. These centres are cells whose functions are to receive the forces carried to them from without by means of the afferent or centripital nerves, also called sensory nerves. and when these forces are received, to adjust them and store them up for use when required, then, by their emissive functions, discharge these forces to the muscles by means of the afferent or centrifugal nerves, thus causing muscular action or conduct. These higher intellectual nerve centres possess not only the functions of receiving forces, adjusting forces, storing forces, and emitting but they have also the functions of sensation and inhibition ; and in virtue of all these functions, these centres are the centres of intelligence and conduct, and all these functions will be good or bad as the structure of the *materia cogitans* be normal or abnormal.

It is an established physical fact that the higher the nerve centres, the lower the organization ; and the lower the nerve centres, the higher are they organized. This explains how rapidly a man changes from sanity to insanity, from being an intelligent man to be a fool. It is a very slight cause that will injure the structures of the cells constituting the higher nerve centres, and, consequently, disarrange their functions because of their low organizations. It is well known what a glass of brandy, a dose of opium, or a whiff of ether or chloroform will do with these nerve centres ; fortunately, the lower centres, because higher organized, are not so sensitive to these drugs,

or there would be more deaths from inebriety, and, consequently, less fools and maniacs.

Why are the highest centres the lowest organized? For two reasons. First, they are not actually necessary for life, as others are; their destruction does not cause death. Secondly, they are chiefly formed and altogether developed after birth. Those centres most, or actually, necessary for existence are the first developed and the higher organized. The higher centres being the last evolved and developed, accounts for the fact that wisdom comes with age; and being of so low an organization accounts for the other physical fact that, in the natural order of things, they are the first to decay, consequently it so frequently occurs in old age that intelligence declines while yet the vegetative organs, so highly organized, are healthy and vigorous. Then the truth of the old adage is established, "Once a man and twice a child." None of us, gentlemen, would, I hope, desire to live to that stage of existence; better the end of evolution.

Taking the nerve centres from above downward, we have next in order, after intelligence, the instinctive centres, then the automatic and the reflex. Now the lower the intellectual functions, such as we have it in infancy and childhood, the higher do we find the instinctive, the automatic and the reflex functions. I speak of normal functions. For example, all other things being equal, we observe in infancy and childhood how much more active these functions are than in manhood; and we find that as the intellectual functions increase the lower functions decrease; a child is solely guided by the functions instinctive, automatic, and reflex, while the intellectual man is governed by his intellectual centres, consequently his other high centres, but lower than his intellectual, for want of use, lose to a great degree their functions. But let this man, from some pathological defect in his *materia cogitans*, lose the function of intelligence and become insane from the loss of equilibrium in his mental forces, such, for example, as is found in a drunken man, and immediately he is governed, not by his abnormal intellectual nerve centre, which has, at least for the time being, lost its functions, but by

his normal instinctive, automatic and reflex centres and their functions. The functions of these centres can be normal while the functions of the intellectual centres are abnormal. But these centres have no inhibitory nerve centre to control their functions and consequent conduct, because the nerve centre, which, by its inhibitory function, controls man's general conduct, comes from the organ of intelligence, so that conduct to be moral, must be intelligent and moral—that is, under the control of the intellectual nerve centre in virtue of its inhibitory function.

The drunken man, who is intellectually a fool, will escape such extraordinary dangers, have such narrow escapes of his life, protected by his lower centres, particularly the functions of his instinctive centres, that it appears to the ignorant and superstitious to be miraculous, which has given origin to the old saying that there is a special providence to watch over and care for the drunken man.

From closely observing the foregoing physical laws which governs our organisms, particularly our higher nerve centres and the nerve circulation of molecular force, we can understand that an intellectual man must necessarily be a moral man, and that an immoral criminal is a fool—a fool because wanting in intelligence, wanting in inhibitory nerve force, his conduct is the outcome of the functions of his instinctive, automatic and reflex nerve centres, and possessing these centres, together with the sympathetic and emotional, and all their functions, there is no reason why such a fool should not also be a cunning knave, and pass for a smart business man who can dupe and get money even out of the most intelligent men by appealing to their sympathy.

Notwithstanding the fact of the increase of insanity, or pathological defect in the higher nerve centres, no doubt chiefly due to their low organization, yet there is hardly a case that the general practitioner is called upon to treat that is not in some way connected with the lower nerve centres or their peripheral branches. The lower nerve centres in man, and in the whole animal kingdom, are the first evolved, and necessarily the highest organized; and all other things being equal, they are the last

to decay, yet, from a thousand different causes, both chemical and mechanical, are they subject to pathological defect, and although abnormal disintegration in the higher nerve centres causes mania and imbecility or dementia, yet their destruction does not necessarily terminate in death, whereas abnormal disintegration or dissolution in lower nerve centres does terminate in death. Now normal evolution and dissolution is the natural law of our existence, and our organisms—that is, of our higher intellectual centres—discharge their forces in virtue of the law of disintegration and reintegration, so that by the latter law these organs recuperate all they lose by emitting force. But should, from pathological cause, reintegration become arrested, the result will be mania in some stage from loss of equilibrium in the mental forces, loss of intellectual forces. Now so many of our vital organs are dependent for their motive forces upon the lower nerve centres that abnormal disintegration in them generally terminates in death, so that while abnormal disintegration in the higher centres leads to a loss of equilibrium in mental forces and consequent insanity. Abnormal disintegration of lower centres leads to death, if so be that it supplies force to a vital organ (lungs or heart for example), and paralysis, if to a muscle or tissue. All these facts you will learn by the clinical course of lectures you are about to enter upon. Keep always, gentlemen, before your eyes that in dealing with physical science there may be, and certainly is, great ignorance as yet, but there is no mystery. We have nothing to treat with, or of, but matter and its functions. Let us be only sure that structure is normal, then we will know that function is normal, and the consequence will be that conduct will be normal also.

When we consider the nervous system with regard to mind, as one of its functions, or forces, or phenomenon, we must remember that it is as much a circulating system as is the vascular system. The latter mechanism circulates the blood into every part of the animal economy by means of that great pump, the heart. So does the nerves circulate vital or molecular force into every part of the animal economy by that great ganglion, the brain, and all the lesser ganglia. The whole ganglionic

system has very properly been called the heart of the nervous circulation, and, reasoning from analogy, we are justified in concluding that any pathological defect of the nervous system, particularly in the afferent or efferent nerves, or in the higher nerve centres, which defect would in any way obstruct molecular circulation, must of necessity affect mind as one of the functions of the *materia cogitans*, and that such a cause would also affect some one or more of the function of any of the lower nerve centres. Not only that, but we have a right to expect that any irritation of the peripheral afferent nerves must derange the functions of their centres.

When there is such a large anatomical surface in such numerous nerve tubes and fibres for the circulation of molecular force, and when we consider the number of these nerves that have other functions, such as trophic and vasomotor, because of their union with the great sympathetic system, we are not surprised to find that there are so many different physical causes to derange the equilibrium of mental functions and cause mania; nor, under the circumstances, can we be surprised at finding so many of the lower centres suffering in their varied functions. We cannot wonder at the various degrees of mania and its various psychological developments, and we must see how necessary is the history of a case and the necessity of a knowledge of all its physical symptoms, as well as that of conduct, to enable us to diagnose the locality of the nerve lesion in the *materia cogitans*, and to find out whether that lesion be the result of chemical or mechanical cause. It is only by attaining to this knowledge that mania can be treated scientifically; indeed no disease, no more than mania, can be treated scientifically unless we know its somatic etiology. Treatment, under any other circumstances, is, as I have already said, empirical, no matter how successful it may be, and empirical treatment is sometimes very successful, yet it is not science.

I have pointed out the physical fact that the lower nerve centres are the first evolved and the highest organized, and the higher nerve centres the last evolved and lowest organized: that the lower centres are actually necessary for life, and the higher

for intelligence. Morphology teaches us that it is the same laws that govern the evolution of all animal organisms. The lower the animal organisms are, the fewer and more simple the nerve centres; the higher the animal organisms, the more numerous and complicated the nerve centres, but the higher the functions of these centres. An animal without any intellectual nerve centres will have the higher instinctive, automatic and reflex centres; that is, the functions of these centres will be of a higher order than will the same functions in an animal with high intellectual functions. All other things being equal, a woman is not, with all due respect for the sex, as highly organized, intellectually, as man; but a woman's instinctive functions are very much higher than man's, so much so as to sometimes make it appear she was of the higher order of intellect. A woman instinctively will know there is danger, and guards against it, long before a man will discover it by his intelligence; but this does not justify giving a woman the *same* high education as man—they are not fitted for it, socially, morally, intellectually or politically. There is no reason why they should not have as high, or even higher, education than man, but not the *same*: the difference in their organisms and their functions forbid it. The stations of the man and woman are two different stations, both equally honorable but not the same in the natural order; both in accord with their physical organization; both intelligent, but not the same intelligence.

A dog who, of the lower animals, it would appear, is the highest in intelligence next to man, but still much lower than man, will instinctively recognise danger before a man will recognize it by his intelligence. And as we descend from the dog to the lower grades of animal organisms, we find it to be a physical fact that the lower the functions of the higher organisms, the higher, comparatively, are the functions of the lower centres, or lower organisms. Let us take reproduction of species as the best and most familiar physiological proof, and we find the lower the organism the more prolific, so that from observation we have the homely term, "ill weeds grow apace."

From the foregoing facts, it is no very difficult thing to under-

stand, what I have more than once observed, that a man can be an immoral and criminal fool for want of intelligence, and, at the same time, in virtue of lower centres, whose functions are instinct and automatism, a smart and clever business man.

In speaking so much on the general physiology of the nervous system, it was that you might, in some degree, be interested as well as instructed, for I can conceive no more interesting subject to the medical student or medical man than the physiology of the nervous system, seeing that all our functions are in virtue of that system. If our functions be normal, it is because the structure of the nervous system is normal. All force that is subjective is through the nervous system. All that is objective, from whence we receive knowledge, is by the nervous system also. And although, properly speaking, that particular portion of the nervous system which constitutes the *materia cogitans*, no doubt, is the grey matter, the cortical portion, whether it may, or may not, have other functions, pathology has demonstrated the fact that wherever there is grey matter, whether covering the brain, the spinal cord or any other nerves or ganglions, in one form or another, there we find mind as a phenomenon of that matter.

Whether, as I have already said, mind be an entity or not, we do not know, and it is doubtful if we ever will know; but we are sure that we can possess no knowledge of it, except as a function of grey nerve structure. As I said in the opening part of this lecture, there may be mind in all matter, but we only can recognize it as a function of the *materia cogitans*. So it is with biotic life, or conscious sensation. We only find it in animal organisms as a function of the nervous system, as we find biological life with motion and apparent sensation as functions of vegetable organisms, and dynamic life in minerals. But consciousness we only know as a function of the *materia cogitans*. Dr. Mercer of London, England, one of the recognized physiologists of the day, speaking of the functions of man, says "his chief functions are to eat and to work. We work that we may eat, and eat that we may work. We cannot live without eating; and we cannot eat without working." Not a very high standard,

gentlemen, for that supposed God-like animal, man ; nevertheless, we have to swallow the description as a great physiological truth.

As to the diseases to which the nervous system is subject, their name is legion. The afferent or centripetal nerves and the efferent or centrifugal nerves are subject to all sort of lesions in every part of their course, both mechanical and chemical. The same is it with the sympathetic and vaso-motor nerves, and all the nerves of sense. And not only are not all these nerves subject to various forms of disease, but the same may be said concerning all nerve centres, whether their centres be situated in the cortex of the brain, medulla oblongata, or spinal cord. In fact, it is impossible for any one part of the human frame to suffer from any disease whatever without complication with some portion of the nervous system. You may rest assured, that to go through the names of all these different diseases and lesions will take more than one lecture. And here I would give you one warning, and that is, never to treat lightly the most simple lesion of a peripheral nerve, for such lesions are always dangerous, whether the cause be chemical or mechanical.

Remember that in animal organisms two laws are always going on at the same time, viz., evolution and dissolution, and that there should be an equilibrium between these forces, it is as necessary that we should have a normal vital circulation through the nervous system as it is to have normal blood circulation through the vascular system. Always bear in mind that, as medical men and physical scientists, in the treatment of diseases we know no mystery, but for every physical effect look for a physical cause.

Gentlemen, there are but few medical practitioners who, looking back to the days of their studentship, have not regretted opportunities lost that never returned ; something that they had left undone that they wished they had done, for the faults of youth are more of omission than commission. But once a man begins his medical practice, and to struggle with the world for his daily bread, he cannot go back again. I would, therefore, urge upon you not to neglect the opportunity now offered of

clinically studying nervous diseases, or the day will surely come when, if you do so, you will deeply regret it; and if the study of the nervous diseases is important, no less so is the therapeutical study of the medicine by which you expect to treat its diseases successfully. You must not only know the physiology of animal matter, but the physiology of vegetable and mineral matter. Then when you have diagnosed pathological defect in any part of the nervous system, you will be the better prepared to prescribe the most suitable medicine to restore the pathological organ to its physiological state of existence.

Gentlemen, you will, I regret to say, meet many men in the medical profession, as well as outside of it, who, ignorant of physical science themselves, will sneer at it, and try to turn you from the study of it, by speaking loudly about learning something practical, meaning thereby empirical treatment of disease. But if you would be scientific mediciners, you must be physicists, you must be men to study the physiology of matter in all and every degree of its stages, mineral, vegetable and animal, and then will you be truly scientific medical men. Then may we look forward, hopefully, for the time when the medical profession will be a truly scientific one, because it will be based upon physical science or natural experimental philosophy. And to the man of law, I would, with the highest respect, say, "Don't reject physical science, because it teaches you that every man is intellectually and morally what he is, in virtue of the functions of his physical or structural organization, but rather study it carefully, that you may be the better able to comprehend the causes of all the different effects that come under your observation in this world of uncivilized barbarians not governed by the natural law of the survival of the fittest, but the survival of those who know no law but that might is right, who are incapable of settling a constitutional question except by leaving the question to be settled by the arbitrament of the sword."

NOTES ON THE MORBID ANATOMY OF PNEUMONIA.*

By WILLIAM OSLER, M.D.,

Fellow of the Royal College of Physicians, London ; Professor of Clinical
Medicine at the University of Pennsylvania ; formerly Professor
in McGill University, and Pathologist to the General
Hospital, Montreal.

My post-mortem records include 105 cases of lobar pneumonia, all of which, with one or two exceptions, occurred at the Montreal General Hospital. For the purposes of this article, I shall exclude five cases, in which either the data are incomplete, or about which I have some doubt. As is the case at most large hospitals, the death-rate from pneumonia at the Montreal General is high, due to the facts first that, as a rule, only the severer cases are brought in, and second that a considerable proportion of the cases occur among enfeebled and dissipated paupers, who rapidly succumb to such an acute affection as pneumonia. In the statistical report of Dr. James Bell,† the mortality for a period of ten years was somewhat over 25 per cent., one-third of the deaths occurring within forty-eight hours of admission. As a contrast, it may be stated that the mortality of the pneumonia cases in the practice of Prof. R. P. Howard of Montreal, during a period of twenty years, was only 4.8.

The statistical details are as follows :—

Sex.—Of the 100 cases, 70 were in males and 30 in females.

Age.—In 94 instances the age was given ; up to the tenth year, 5 cases ; between 10th and 20th, 6 ; from 20th to 30th, 12 ; between 30th and 40th, 18 ; between 40th and 50th, 21 ; between 50th and 60th, 12 ; and over 60, 20 cases.

Lung affected.—In 51 cases, the right ; in 32 cases, the left ; in 17, both. As to the position of the inflamed region in the lung the figures are : in the right, whole organ solidified (except, perhaps, narrow margin at apex and anterior border) in 17 ;

* Read before the Pathological Society of Philadelphia, April 23rd, 1865.

[This, with other articles on morbid anatomy which will follow from time to time, will constitute my third and last Pathological Report from the Montreal General Hospital.]

† Montreal General Hospital Reports. Vol. I. Dawson Bros. 1880.

lower lobe alone, in 18; upper alone, in 7; middle and lower, in 3; middle and upper, in 2; upper and lower, in 3. In the left lung, entire organ in 10; lower lobe in 16; upper lobe in 6. In the cases of double pneumonia, it was most often the lower lobes which were affected together, but in three instances the lower lobe of one lung and the upper of the other were affected; in three cases both upper lobes; and in *Case XLIX* the most extensive inflammation of both lungs occurred—the left was in a state of uniform red-hepatization, with the exception of the anterior border, and the right in the stage of grey-hepatization, except still smaller portions of the corresponding regions. Altogether, in 39 instances a lower lobe was involved, in 19 an entire lung, and in 16 the upper lobe.

Weight of lungs.—To estimate the amount of solid exudation, the lungs were generally weighed. The heaviest was in *Case XLVIII*, a man aged 40, whose left lung, uniformly solid, weighed 2303 grammes, and the right, very congested and œdematous, 900 grammes. (The normal lung weight is between 600 and 700 grammes.) In eight cases the affected lung weighed about 2000 grammes, representing rather more than three pounds of solid exudate.

State of lung tissue affected.—In about one-half the cases, the inflamed area was in a state of red hepatization. In 30 per cent. there were regions of grey hepatization with the red, and in 22 cases there was grey hepatization either dry or passing into the condition of purulent infiltration.

State of uninvolved portions.—Usually the crepitant parts of the affected lung were greatly congested or intensely œdematous. The latter was invariably the case when the whole organ, except the apex and anterior border, was involved, which then presented a condition of almost gelatinous œdema. The unaffected lung was generally congested and œdematous, particularly at the posterior part. It was not uncommon to find the anterior portions quite dry and bloodless, while the dependent regions were full of blood and serum. No doubt this is largely due to post-mortem subsidence. We do not always find extensive congestion or œdema in the uninfamed parts. Thus in *Case XXXII*, in which

the lower lobe of right lung was hepatized, the upper and middle lobes were noted as "very dry and bloodless," whereas the left lung was œdematous, except at anterior borders. So, also, in *Case LVIII*, a woman, aged 50, with red hepatization of left lower lobe, the upper lobe was crepitant throughout, dry on section, no redness, and no blood. The right lung was also crepitant (except a fibroid apex), dry, no œdema, and very little blood.

Air passages.—The bronchi generally contained a frothy, serous fluid—not often the tenacious mucus characteristic of pneumonic expectoration. The mucous membrane was usually reddened, rarely swollen. In the affected regions the smaller bronchi very often contained fibrinous plugs, and in twelve instances these were noted as very abundant and extending into the larger tubes of the inflamed region, forming perfect casts of the bronchi.

The *bronchial glands* were invariably swollen, succulent, occasionally very soft and pulpy. In no instance was there suppuration.

The pleuræ.—When the inflammation reaches the surface of the lung the pleura is inevitably involved, with the result, commonly, of a thin sheeting of exudate, perhaps of such delicacy that it only produces turbidity of the membrane. In only two instances the pneumonia was deep-seated, and did not reach the pleura; in every other instance this membrane was involved in a greater or less degree. In some cases the fibrinous exudate was extraordinarily thick and extensive, as in *Case V*, in which the right lung was uniformly solid, weighing 3 lbs. 6 ozs., and every portion of the pleura was covered by a creamy fibrinous layer an inch in thickness.* In several cases there was copious exudation, amounting to three or four pints. In six cases there was extensive double pleurisy, with pneumonia on one side only. *Case XV* illustrated how readily the inflammation could cross the anterior mediastinum and spread from the pleura of left upper lobe to that of the right.

Among the more uncommon terminations of pneumonia, there were cases of abscess, gangrene, and fibroid induration.

* Specimen in the museum of McGill College.

Abscess.—When a lung in a state of purulent infiltration is examined, we wonder that softening and breaking down of the lung tissue is not a more frequent result of this process. In four instances there were definite small abscesses. In *Case XXXIV*, a woman, aged 56, with grey hepatization of the right upper lobe, there was a small abscess cavity, with shreddy walls, the size of a walnut, in the anterior portion of the lobe. The tissue about it was in a state of purulent infiltration. In *Case XXXVI*, male, aged 60, with grey hepatization of upper half of left lung, there were in the central part of the upper lobe several spots of softening, the size of marbles, irregular, with ragged, uneven walls and purulent contents. *Case LXXVII*, female, aged 64, with almost uniform consolidation of left lung, the upper lobe was in a state of intense purulent infiltration, and there were in the middle portion several large abscess cavities communicating with each other, with ragged walls and purulent contents.

Gangrene.—In three instances this termination was met with. *Case LIV*, a woman, aged 35, a hard drinker, was admitted with pneumonia of the left lung, which had existed for some days, during which she had been neglected and much exposed to the cold. The lower lobe presented at its apex and extreme base signs of consolidation, but in the rest of its extent was represented by a large gangrenous cavity, occupied by shreddy and necrotic lung tissue and blood clots, the whole forming a stinking mass.* The walls were not defined, except at the lower part, where a separation between the sloughing and firmer lung tissue could be plainly seen. In *Case LX*, male, aged 63, with pneumonia of the left lung, there was a spot of gangrene at the apex surrounded by dark consolidated tissue. *Case LXXIV*, male, aged 50, a hard drinker for 20 years, admitted supposed to be suffering with delirium tremens; had had convulsions before admission. Rigidity of muscles of arms, coma and death 36 hours after admission. At apex of right lung a gangrenous mass the size of a hen's egg, surrounded by greenish-black consolidated tissue. Suppurative meningitis of cortex.

* Specimen in museum of McGill Medical Faculty.

Fibroid induration.—The production of a chronic—so-called interstitial—pneumonia from the ordinary croupous form is, perhaps, the most rare termination of the disease. The following case is of special interest, from the fact that the man was under observation almost from the outset, and the induration was in patches and in an early stage:—Louis Phillippe, aged 58, a laborer, was admitted with cough and pain in the side. Had a chill five days before admission. Temperature 101°F.; pulse 106; respiration 26. Expectoration not bloody. Physical signs of pneumonia over right lower mammary, infra-axillary, scapular and infra-scapular regions. During the first ten days in hospital patient made no satisfactory progress; temperature ranged from 99° to 103°; he was heavy and dull, not delirious; pulse weak, 100 to 120. Defective resonance in infra-clavicular regions on right side; in mammary region, a flat tympanitic note; behind, absolute dulness, feeble-blowing breathing; a few râles on deep inspiration. The note over right mammary was markedly tympanitic. Patient emaciating. No heart murmur; very little expectoration, muco-purulent, not bloody. On the 26th day he had a chill, and the temperature went up to 104°. No change in physical signs. Died at noon of the 27th day after admission. The right lung was uniformly solid, greyish in color, with recent pleuritic exudation, and the surface, on section, bathed with serous fluid. On carefully inspecting the cut section, three features called for attention. In the first place, in certain regions the air-cells could be seen with their fibrinous plugs, of a very opaque white character, undergoing fatty change. This state existed in very considerable areas. Secondly, there were small localized areas densely infiltrated with pus, and breaking down into definite abscesses. The largest of these was about the size of a marble. And thirdly, in several areas of the lung there were spots which had a very translucent aspect, were firm, smooth, homogeneous, not granular, and had the look of a recent connective tissue. In these areas a fibroid change was going on in the lung; the alveolar walls were thickened, and the fibrinous plugs filling the air-cells were undergoing transformation into a new growth of connective tissue.

State of the other Organs—Heart.—Distension of the chambers, particularly the right, with very firm, tenacious coagula, is a very constant feature in pneumonia autopsies. The right auricle is usually very full, and a solid mould, capped usually with a buffy layer, can generally be removed with the extensions into the cava and many of its branches. I have seen a complete cast of the branches of the superior cava, even to the smaller vessels, and a mould of the inferior cava, including the hepatic and the iliac branches. From the pulmonary artery there can be withdrawn, by careful manipulation, a dendritic clot representing the vessels of quite small calibre. In no disease, I think, are we likely to meet with such solid coagula—so firm and fibrinous; and on several occasions, when I did not know the nature of the case, the preliminary incisions for the right chambers have enabled me to make a shrewd guess as to the existence of pneumonia. In many instances the engorged state of the right side and condition of general venous stasis, suggested the possibility that a copious venesection might have relieved the overloaded chambers—and I have in several cases acted with benefit upon this suggestion. In extensive red hepatization the circulation in the inflamed area must be very much impeded, and the work of the right ventricle greatly increased. If we may reason from the experiments of Welch,* the collateral œdema, which we have so much dreaded under these circumstances, has no existence; for he seems to show very clearly that to produce pulmonary œdema the blood pressure must be raised to a point very much beyond that which can be induced by the cutting off of certain territories of capillaries, however extensive, in a pneumonia. Yet there are difficulties in the way of explaining the œdema of the sound portions of the lung on the view which Prof. Welch holds, viz., that the left ventricle is first weakened or paralyzed and the continued action of the right gradually produces the engorgement and œdema. It seems natural to think that the engorged right ventricle would more quickly fail than the left, which is rarely

*Virchow's Archiv. lxxii.

found so full, and certainly has not to bear the strain and tension of the right chamber.

The left chambers usually contained coagula, but were rarely distended, never to the degree often met with in the right.

The tricuspid orifice was frequently found dilated, measuring from five to six inches in circumference.

Turbidity and moderate fatty change were sometimes noted in connection with the heart muscle. The endocarditis will be considered with the complications.

Spleen.—Friedreich and others have called attention to the very general enlargement of this organ in pneumonia. The normal weight may be taken at about 170 grammes. In only 35 cases was the weight over 200 grammes—the heaviest, in *Case LXXV*, was 670 grammes. In 12 cases the weight was under the average; in *Case LV* it was only 72 grammes. Usually the pulp was very soft; but in four cases the note is, “pulp firm, and cuts well.” In many cases the weight was not recorded, but the note entered was either “normal” or “slightly enlarged.”

Kidneys.—In exactly 25 per cent. these organs showed signs of interstitial changes, being hard and fibroid, with adherent capsules and often small cysts. In eight cases there was marked parenchymatous swelling; in *Case XXIII*, chronic parenchymatous nephritis; in *Case XXV*, amyloid degeneration, and in *Case XXXII* extensive fatty changes in the tubules.

Other Diseases and Injuries.—One case occurred in connection with diabetes and one with erysipelas. Three cases followed injuries, one a burn, and one came on in the course of a carbuncle. In all, the pneumonia was fibrous and lobar. These cases of “contusions-pneumonia,” as Litten terms this form,* are very interesting, and may come on after slight or severe injuries, or after operations.

COMPLICATIONS.

Pericarditis occurred in five cases. In two there was extensive double pleurisy with the pneumonia. In one there was

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endocarditis as well. Except in *Case XCIII*, a portion of lung contiguous to the pericardium was involved in each case.

Endocarditis.—I have on several occasions called attention to our exceptional experience in this respect, though, indeed, a review of the literature shows that the occurrence of this complication in pneumonia is by no means infrequent. In 16 cases there was endocarditis, either of the simple or malignant types, most often of the latter. In five instances these were simple warty vegetations, and there were no special cardiac symptoms. In 11 cases the lesions were more extensive, usually of the ulcerative form, and the character of the disease was much altered, or even masked by this complication. Our cases bear out Bouillaud's suggestion that endocarditis most frequently complicates left-sided pneumonia, but in a review of 36 cases of endocarditis occurring in this disease, and in which the lung affected was mentioned, I find that in 20 it was in the right side and only 10 in the left, so that it seems doubtful if contiguity has anything to do with it.

Meningitis.—In eight cases there was meningeal inflammation, in seven pia-arachnitis, and in one dura-arachnitis. In five of these cases there was also ulcerative endocarditis. Brief details of the cases may be given:—*Case II*, male, aged 38; red hepatization of upper lobe of right lung, extensive exudation at base of brain, in longitudinal sinus and along the Sylvian fissure.

Case LXVII, woman, aged 64. Grey hepatization of left lung, with small abscess cavity; the under surface of the dura-mater of left hemisphere covered by a sheeting of recent lymph, which could be detached in flakes. No lymph beneath the arachnoid or at the base.

Case LXXXIV, male, aged 50. Grey hepatization of right upper lobe and a spot of gangrene. Intense congestion of cortical meninges and exudation of lymph in patches over the frontal and occipital lobes; none at the base.

The following cases were associated with endocarditis:

Case XXVIII, female, aged 29. Upper half of right lung hepatized. Mitral ulcerative endocarditis. Meningitis of the cortex. A thick flake in the neighborhood of the left fifth nerve, and another about the optic chiasm.

Case L, male, aged 40. Lower lobe of right lung. Extensive endocarditis of mitral and aortic valves. Thick creamy lymph over sides and upper surfaces of the hemisphere. None at the base.

Case LXXIX, male, aged 43. Lower half of left lung affected. Endocarditis, mitral and aortic. Meningitis of the left hemisphere, with exudation of lymph over the frontal and parietal convolutions. None at the base or on the right side.

Case LXXXVII, male. Double pneumonia; right apex. Ulcerative endocarditis of mitral. Cortical meningitis. No lymph at the base.

Case XCIX, female, aged 19. Red hepatization of central part of right lung. Endocarditis of anterior segment of mitral valve. Meningitis of cortex—both hemispheres.

The complication of meningitis is one of the most serious that can occur in pneumonia, and it would appear, in a considerable proportion of the cases, to be associated with ulcerative endocarditis. We may suppose the inflammation of the heart and the meninges to be induced by a common cause, or, what would appear likely in many cases, the meningitis is embolic in origin, for it also occurs in malignant endocarditis, unassociated with pneumonia. In 20 cases of meningitis in this disease, only 15 occurred with pneumonia. The infective material may possibly be derived directly from the infiltrated lung tissue, and carried off by the pulmonary veins. We know that occasionally large emboli may be derived from this source, as in a case of pneumonia occurring at the General Hospital in 1879, in which, during the progress of the disease, and not associated with endocarditis, there was embolism of one femoral artery and gangrene of the leg, necessitating amputation above the knee.

The inflammation in these cases is almost always cortical, and the chief symptoms are initial delirium, then stupor and coma, sometimes rigidity of the muscles.*

* The literature of meningitis in pneumonia is scanty. From Vulpian's clinic a good thesis was written by Surugue (1875). In the St. Thomas' Hospital Reports, 1878, some cases are given by Greenfield, and there are valuable references in that storehouse of clinical material, Traube's *Gesamelte Abhandlungen*.

Croupous Colitis.—In Cases III, XXVIII, XLII, LXXXV and XCIX this unusual complication was met with. In Case III the cœcum was covered with a thin layer of adherent lymph, and scattered throughout the colon and sigmoid flexure there were numerous elevated patches of lymph, about the size and shape of rupia-crusts, which on section were found firmly attached to the mucosa. In this instance, the process was very extensive and the patches much thicker than in any subsequent case. More often there is a thin, flaky exudation, involving only the surface of the mucous membrane. In none of the cases was there ulceration.

Croupous Gastritis.—In Case IV, the stomach and duodenum were found “greatly distended with gas. The mucosa was pale, except about the fundus, where, just to the left of the cardia, there was an extensive area of croupous inflammation, represented by a thick, adherent greyish-white exudate, covering an area 12 by 8 cm. Beneath the mucosa the membrane was deeply injected.”

This paper is meant to be merely a statement of facts, a record of observations, upon a common and well-known disease; but as opinion is still divided as to the general or local nature of pneumonia, it is interesting to note how strongly the evidence from morbid anatomy tends towards the former view. The frequency of the occurrence of various consecutive inflammations finds a parallel only in some of the specific fevers.

While this paper has but a trifling value as a pathological contribution, to the writer, as doubtless to the students who performed the autopsies under his direction, the careful study and observation of the cases upon which it has been based has been of the greatest service. In the investigation of disease a knowledge of the morbid phenomena observed during life and of the organic alterations found after death are inseparable. The teaching of the post-mortem room must supplement and illustrate the lessons of the ward, and, as Bichat says, it is neither from the one nor the other, but from both, that “la véritable pathologie” can be gained.

CASE OF PULSATING EMPYEMA, SIMULATING ANEURISM—SPONTANEOUS RUPTURE AND RECOVERY.

By GEORGE ROSS, A.M., M.D.,

Prof. Clinical Medicine, McGill University; Physician to the Montreal General Hospital, &c.

(Read before the Medico-Chirurgical Society of Montreal, March 6, 1885.)

G. W., æt. 37, express-driver, was admitted into the Montreal General Hospital on the 29th December, 1884, suffering from sharp pain in the left side, a short cough, and feverishness. Two of his brothers have died of phthisis. He himself has always been a strong and healthy fellow. Had pneumonia five years ago, with which he was in bed for three months. Never had rheumatism nor syphilis, and has never been affected with thoracic pain or shortness of breath.

His present attack began on the 24th December, when he got a severe wetting, and did not feel very well. Was drinking a good deal at the time. On the 26th he had a chill, followed by sudden stabbing pain in the left side. Took to bed the same day, and had a short, hacking cough, with slight expectoration.

On admission.—Patient is a strong, able man, of good muscular development. Face flushed, with dilated venules. Skin hot and dry. Herpetic eruption on lips. Pain is much complained of, situated in the left lower axillary region, considerably increased on inspiration and by pressure over the same part. Cough short, and accompanied by pain and expectoration, which is of a glairy, mucous character. Temperature 103° at night. Pulse 120, small and weak. Respirations 24, short and shallow. Tongue moist and coated.

Examination shows somewhat deficient expansion upon the left side. Dulness on percussion at the left base, where the respiratory murmur is weak and accompanied by a few crackling râles. Resonance and fremitus diminished in the same area. Heart sounds are feeble, and free from murmur. The urine contains a heavy deposit of lithates; no albumen.

The patient continued in much the same condition for several days, the temperature pretty high, and the pulse always above 120. The pain only slightly diminished. On the 2nd January,

the note gives dulness to angle of scapula and through lower axillary region. During the following week he suffered a great deal of pain in the left side, not specially confined to the lateral region, as before, and more continuous, preventing him from sleeping, and making him look feeble and exhausted. The fever still remained, and he inclined to sweat a good deal.

I did not see him during this time, but re-examined him on January 8th, when the following notes were made: The dulness in the lower areas of the left side much less. On percussing the front of the chest, a flat note is found commencing at the upper margin of the second left costal cartilage, and continuous with that of the heart. This dull area is bounded externally by a line drawn through the nipple, and it passes as well directly across the sternum and to a finger's-breadth to the right of this bone. The expansion movement of the left front is much impaired; the second and third intercostal spaces are observed to be prominent, and to present a quite perceptible pulsation, synchronous with the systole of the heart. On palpation, the pulsations are felt quite strongly. Resonance and fremitus much diminished. The vesicular murmur is almost absent in the dull area, and is found, moreover, to be markedly enfeebled throughout the whole left lung.

During the two weeks following, the case appeared to be stationary. The temperature fluctuated somewhat, but was always above normal. He sweated a good deal, and emaciated considerably. The pain was persistent, and rendered intolerable by any attempt to lie upon the left side. The physical signs were those last described.

On the 22nd January, a rough friction-sound was heard along the right margin of the sternum, from near the clavicle to the third rib. At this time he had increased fever, with nausea and vomiting; and on this and the following day the pain was more especially complained of about the dull region under the left clavicle.

On the night of the 2nd February he had a severe fit of coughing (having had but little cough for some days previously), which was immediately followed by the out-flow of a good pint of

pure pus. This was thick and creamy, and had no ill-odour. The whole of it was brought up in a few minutes. When seen the next morning, he had a loose cough, every effort serving to bring up a large mouthful of pus. In this way half a pint or more was expectorated during the day. The percussion-note of the previously dull area at once changed to a clear and somewhat tympanitic note. The pulsating tumor had entirely disappeared. The breathing was cavernous, and accompanied by bubbling râles. The respiratory murmur throughout the left lung has become stronger.

A loose cough, with some purulent expectoration, continued for a few days, and then ceased entirely. The temperature fell at once to normal, and has there remained. The percussion quickly became pulmonary in quality, the respiratory murmur was re-established everywhere, and the râles disappeared. Sleep and appetite soon returned, and on the 2nd March the patient left the hospital strong and well.

Remarks.—From the history of this case, as above detailed, it is sufficiently evident that a considerable collection of pus was formed in the upper part of the chest, upon the left side, as a result of an acute pleuritic inflammation. That this localized empyema was so situated that it communicated very distinct pulsations either from the heart itself or from the aorta to the surface of the thorax. That it subsequently opened and discharged itself through the air-passages, thus allowing the corresponding lung to entirely re-expand. That thus a complete and spontaneous cure was brought about. It will have been noticed that evidence of the early stages of the pleurisy—friction-murmur—in the situation later occupied by the effusion was not observed. This probably arose from the fact of attention having been directed to the base of the lung, where the trouble seemed to be entirely located at the commencement. When I re-examined the patient myself on the 8th January, I discovered the very striking physical signs which have been mentioned. One can hardly fail to be struck with the remarkable similarity between this collection of signs and those so frequently met with from an aneurism of the thoracic aorta—viz., localized well-

defined dull area to one side of and beneath the upper portion of the sternum, prominence of the spaces, and, above all, pulsations very distinct and easily both seen and felt. Moreover, very decided enfeeblement of the respiratory murmur in every region of the left lung. The case was therefore reviewed with the idea of this possibility borne in mind. There was no bruit, there was no intensification of the second sound (the more important, diagnostically, of the two), there was no fulness or palpable pulsation behind the manubrium, there was no downward traction upon the trachea. These points decided, I thought positively, against aneurism. Moreover, the clinical history of the patient previous to his present acute attack was entirely negative as regarded the usual subjective symptoms of thoracic aneurism. We had, too, the very best reasons for believing that, on his admission, no such physical signs were present, as he had been examined by my house physician and by an experienced clinical clerk. The combined dulness, enfeebled breathing and diminished fremitus accompanying and following upon the evidences of inflammatory action plainly declared by the continued pain and marked febrile disturbance—all pointed to the presence of fluid, and probably purulent fluid. The pulsation, of course, was a very unusual feature in the case, but that this occasionally is produced through purulent effusions we all very well know. The observation which I found most difficult to explain was the decided obscuration of the vesicular murmur throughout the entire lung. The percussion-note was not obviously altered from that of the opposite side, except at the extreme base, where a small effusion was rapidly disappearing; and the conclusion was inevitable that the absence of tidal air must be explained by the existence of pressure upon the main bronchus. I have never before met with this condition as a result of an advancing collection of fluid. On the other hand, how common it is to find it brought about by the advancing pressure of a growing neoplasm or aneurismal tumor. Although, therefore, we had good reason to look upon the local trouble as probably an empyema, I thought that the possible existence of some obscure neoplasm (not an aneurism) was not to be lost

sight of, as, perhaps, complicating the case. A few days later, the occurrence of loud frictions to the right of the sternum proved the existence of continued inflammation of the serous membrane. The happy termination of the case you already know; and the fact that, after spontaneous evacuation of the purulent collection, the left lung responded completely, with resonance and tidal wave unimpaired, showed conclusively that the entire set of symptoms and physical signs had been produced by a localized empyema.

Empyema is a sufficiently common condition, and we all meet with many examples of it, occurring under a great variety of circumstances, in the course of our regular practice, but, although these collections are quite frequently situated upon the left side, yet it is very rarely indeed that the pulsations of the heart or great vessels are communicated through the purulent fluid. Rare, however, as such cases undoubtedly are, they must nevertheless be borne in mind, for they are apt to simulate aneurism, and cause errors in diagnosis. In the majority of instances, the situation and extent of the dull area will be such as to offer no difficulties of the kind, but in cases like the one I have described, the physical signs are accurately limited to just such an area as might be occupied by an aneurismal tumor. If this patient had been seen for the first time on January 8th, and with an imperfect clinical history, it might have required very careful examination and the employment of the method of exclusion in order to arrive at a correct opinion.

This symptom has been known for a long time. Fraentzel (Ziemssen's Cycl.) quotes the expressions of an old writer, Le Roy, to prove this. "When, with these indications (of empyema) which we have given, a troublesome beating arises in a certain part of the chest, we must not hastily conclude that an aneurism is present." "When the collection of pus is so placed that the action of the heart or of the great blood-vessels makes an impression upon it, there sometimes arises the false appearance of an aneurism."

I think that in this case the pulsations observed were communicated from the aorta. This vessel, being filled by each

successive systole, would necessarily compress any sac of fluid in immediate contact with it and, if the latter touched the thoracic parietes, cause visible projections upon the surface. On the other hand, when pulsations are observed in the side of the chest, from the heart itself, these must be produced by the lateral movement of the heart from right to left during the systole; because, with contraction, the heart does not increase in bulk, and could not, therefore, produce compression of an adjacent body of fluid. The full explanation of these communicated pulsations is an interesting subject, and one on which but very little that is satisfactory is to be found in medical literature.

CLINICAL NOTES ON "SWALLOWING OF THE TONGUE."

By GEO. W. MAJOR, B.A., M.D.,

Late Clinical Assistant, Hospital for Diseases of the Throat and Chest, London, Eng.; Out-door Physician to the Montreal General Hospital; Fellow of the American Laryngological Association; and Instructor in Laryngology and Diseases of the Nose and Throat, McGill University, Montreal.

"Swallowing of the tongue," though a recognized possibility, is of rare occurrence. The literature, upon this subject, is meagre, but few cases having been recorded. Additional interest may attach to the following report, in that the phenomenon was observed with the laryngeal mirror:—

Betsy K., widow, æt. 30, a native of Poland, applied at the Nose and Throat Clinic of the Montreal General Hospital, on March 28th, 1885, for treatment. The patient showed syphilitic heredity, as evidenced by a saddle nose and partial destruction of the velum. The latter condition was turned to good account in conducting the laryngoscopic examination. The woman was of a highly nervous and hysterical temperament, she constantly heaved deep sighs, and complained of a sinking feeling, with weakness.

I noticed that repeated acts of forcible deglutition were followed by a deep inspiration, when breathing would suddenly cease; but after a few seconds of suspension, an expiratory effort would be ushered in by a distinctly audible *clucking* sound, which evidently afforded great relief to the patient.

On examination with the laryngoscope, a clear view was readily obtained. The pharyngo-larynx was very spacious, and beyond a little congestion, was fairly healthy. The action of the ventricular bands and vocal cords showed no tendency to spasm.

On continuing the exposure, the tongue was observed to retract, impinge upon the epiglottis, and then quickly recover its normal position in the mouth. This process, which was several times repeated, was followed by a deep inspiration; when the base of the tongue would press down the epiglottis, completely obscuring it from view, and impact itself against the pharyngeal wall, thereby preventing the entrance and exit of air. After a few seconds, the spasm of the tongue would relax, the epiglottis would be released, accompanied by the sound before referred to, and breathing would once more be restored.

The loss of a portion of the soft palate and pillars greatly facilitated these observations, and enabled me, on half-a-dozen occasions, to demonstrate the *modus operandi* of this peculiar neurosis, (for as such I regard it) to my class in laryngology, at the summer session.

Under tonics and nervines, improvement followed, and though the tendency to the attacks still continues, the act is incomplete, and as a result, respiration is not seriously interfered with.

"Swallowing of the tongue" may possibly be confounded with spasm of the glottis. A knowledge of its possible occurrence, however, will go far to prevent an error in diagnosis.

I am not aware of any recorded instance, where this condition has been before observed with the laryngoscope. In the published cases, many of which were fatal, division of the frenum linguæ and whooping-cough were the chief factors. In these, the tongue was retroflexed and the tip became wedged in the throat. This was not remarked in my case, in which the difficulty was due to the base of the tongue pressing upon the epiglottis.

In the administration of chloroform, "swallowing of the tongue" may occur; but by drawing the tip forward with forceps, danger is averted.

A concise report of the literature upon this subject was published by Henning of Leipsic (*Jahrb. für Kinderheilk*, Vol. XI.,

p. 213), and may be found in the *American Jour. of Obstetrics*, January 1878, p. 208.

Dr. J. Solis-Cohen, in speaking of laryngeal spasm, says :

“ In some cases of supposed spasm, the tongue is swallowed, as it were, occluding the larynx ; and this is occasionally fatal.” (Cohen on Diseases of the Throat and Nasal Passages, 1880, p. 628.)

Dr. Ingals, of Chicago, reports an interesting case with remarks, in the *Archives of Laryngology*, Vol. II., p. 135.

Not more than half a score of cases have been recorded ; but in absence of laryngoscopic examination, no absolute certainty can exist as to the precise nature of any of them.

QUARTERLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

PREPARED BY WILLIAM GARDNER, M.D.,

Professor of Gynæcology, McGill University ; Attending Physician to the University Dispensary for Diseases of Women ; Physician to the Out-Patient Department, Montreal General Hospital.

At a recent meeting of the New York Academy of Medicine, held at Nashville April 14th, 15th and 16th, 1885, Dr. James B. Hunter read a paper on “ *Endometritis Fungosa*.” According to his own experience, Dr. Hunter said, fungosities proper were never found in the cervical canal, though they might be found immediately beyond this. They resembled small polypi, and while seldom exceeding five millimetres in diameter, were usually much smaller than this. Neither the number of the growths nor their size seemed to have any proportion whatever to the amount of hemorrhage resulting from their presence. They were of a pale pink color, had an abundant vascular supply, and there was always a distinct fibrous element in their structure. They constitute a truly inflammatory tissue, and were characterized by no process at all akin to degeneration, although Dr. Thomas, in his work on diseases of women, alluded to the condition as fungous degeneration of the lining membrane of the uterus. It had often excited remark that such profuse hemorrhage should result from such an apparently slight cause ; but this was in reality not to be wondered

at when the great extent of surface presented by the cavity of the uterus when studded with these growths was taken into consideration. The superficial area of the endometrium was enormously increased by the presence of even a few of them. The question of the true cause of the hemorrhage resulting from them, however, had been avoided by all writers on the subject with whose works he was acquainted.

In making a diagnosis of endometritis fungosa, it was sometimes quite difficult to exclude sarcoma and epithelioma from the examination of a single specimen, and, hence, it was very desirable that repeated examinations should be made. Great care and perseverance were, therefore, often necessary in order to arrive positively at a correct diagnosis.

As to the symptomatology, the principal, and, indeed, only symptom of importance was menorrhagia; pain being quite rare, as a rule. In this condition the menstrual period was likely to be increased; while in carcinoma there was a metrorrhagia, rather than a menorrhagia. Sarcoma usually did not appear until after the 35th year; but endometritis fungosa might occur at any time during the childbearing period as well as (though more rarely) both before and after the latter. The affection had no connection whatever with syphilis or gonorrhoea; but was often associated with uterine fibroids. Dr. Hunter then called attention to the differential diagnosis on the one hand between endometritis fungosa and such foreign growths as polypi, adenomata, retained decidua, papillomata (which were believed to be always a friend to the cervical canal, and thus occupying a distinctly different position), and the so-called villous degeneration of the endometrium referred to by Goodell; and, on the other, from malignant affections. Among the latter, round-celled sarcoma is most liable to be mistaken for it, and is not so common as Dr. Mundé, in his paper sent to the Edinburgh Obstetrical Society, in 1878, and other authors had stated. In addition to microscopical differences, there are certain points by which a differential diagnosis may be made, and among these are the following: In endometritis fungosa there is little pain, while in sarcoma the pain is

apt to be a prominent feature. In the one there is, as a rule, menorrhagia; in the other, metrorrhagia. In the one the discharge is odorless; in the other it is often offensive. In the one the growths are of a pale pink, and firm in consistence; in the other they are grayish-white, amorphous, and very friable. In the one there is no infiltration of the surrounding tissue; in the other there is marked infiltration and the surrounding mucous membrane is destroyed. In the one the pathological changes are confined exclusively to the mucous membrane; in the other they involve the body of the uterus also.

The treatment of the fungous growths themselves is very simple, consisting merely of their removal from the endometrium by means of the curette. The treatment of the condition which gives rise to them, however, is generally a more difficult matter, and on the success of this depends the prospect of a return of the fungosities. In his own experience he had never found it necessary to produce dilatation of the cervical canal before using the curette, as the mouth of the uterus was always sufficiently patulous for the purpose. He thought it better to etherize the patient, as the growth can be more thoroughly and satisfactorily removed when this was done. Sims's speculum is placed in the vagina, and the instrument employed is the Thomas blunt copper wire curette. After the curetting Churchill's tincture of iodine is thoroughly applied to the whole endometrium, and a light tampon having been inserted, the patient is put to bed for two days.

The use of the curette has an excellent effect on the congested mucous membrane of the cavity of the uterus, even when no fungosities are present. The contra-indications for resorting to the curette are recent pelvic inflammation or the existence of any degree of parametritis. Récamier's original curette was undoubtedly a cutting instrument. It has recently been claimed in England that it is blunt; but there is in reality no evidence that such is the case.

Both Sims' and Simon's curettes are also cutting steel instruments. In the curette of Dr. Thomas, which he devised about 1870, the bluntness is the important factor, and it was

the first one of the kind. Two sizes of the instrument are used. Emmet's curette-forceps is an entirely different instrument. The blunt curette is perfectly safe, and, as it is thoroughly efficacious in removing fungous growths, he thinks that it is greatly to be preferred in this class of cases.

In the course of the discussion,

Dr. W. Gill Wylie said that the pathology of the affection had been well stated, and that he was willing to accept the greater part of the paper, though he would object to Dr. Hunter's treatment in some respects. He agreed with him in the statement that the use of the curette was seldom followed by hemorrhage; and he was, therefore, somewhat surprised when he heard him say that he was in the habit of employing a light tampon after curetting. For himself, he never used a tampon if he could possibly avoid it, because he considers it a violation of one of the first laws of surgery—thorough drainage. Even in cases of cancer, he prefers to stop hemorrhage in some other way. If the circular artery had been injured he would twist it with a silver wire, and under any circumstances would apply lint and cold water, styptics or pure carbolic acid, and even wait an hour before resorting to the tampon. Before antiseptics were used it was well known how offensive the tampon became, and although this may to a great extent be avoided by the use of the bichloride of mercury and iodoform, he believes there is always a liability of irritating fluid being forced up into the Fallopian tubes. He is in the habit of practising dilatation in all cases, and principally for the purpose of securing more proper drainage. In addition, though the os were quite patulous, there is always danger of injuring the cervical tissue with the curette unless further dilatation is made. He is, of course, strongly opposed to the use of sponge tents on account of the danger of septic absorption, and always uses Sims' steel dilators. He also uses Sims' steel curette, and in regard to this instrument he thought great injustice had been done Dr. Sims. The so-called sharp Sims' curette is not in reality a sharp curette, although it is true that it is made of steel. At first it was made with a flexible shank, but afterwards it was found

advisable to have it constructed with an univerval curve. If a tenaculum is employed in connection with the curette, any uterus can be straightened to such an extent as to admit of having the instrument satisfactorily applied to every portion of its cavity. The advantage of the steel curette over the dull copper one is, that it does the work desired more thoroughly, while at the same time it does not injure the normal tissue. In many cases he believes that the dull curette is not sufficient, because it cannot remove the fungosities perfectly. Sarcoma could also be removed very thoroughly with the steel instrument.

Dr. P. F. Mundé said that since his paper, read seven years ago before the Edinburgh Obstetrical Society, to which Dr. Hunter had alluded, had been written, cases of sarcoma have accumulated; the disease having of late become much better known than formerly. He thought that Dr. Hunter ought to have given attention to the influence of laceration of the cervix upon the causation of endometritis fungosa. He believed that it constitutes a very important element in the etiology. This is the first link in the pathological chain which finally results in the fungous growths in the cavity of the uterus; and in restoring the organ to its normal condition it is inconsistent in the gynecologist to proceed in an inverse order. The first thing to do is to scrape away all the fungosities with the curette, and the next to apply strong tincture of iodine thoroughly to the inflamed endometrium; after which, if he repaired the laceration of the cervix there would be little danger of a return of the trouble.

In regard to the after-treatment, he disagreed with Dr. Wylie and accepted the position of Dr. Hunter. When there is subinvolution there is very apt to be pretty free hemorrhage, and he is often glad to plug both the uterus and the vagina. He does not believe it a good plan to curette a patient except at her own home and under the influence of an anæsthetic, and does not think it is safe to leave the house without having placed a tampon in position. After using the curette he makes an application of either tincture of iodine or of a mixture of

equal parts of solution of persulphate of iron and glycerine, after which he places a tampon in the vagina. He regards this procedure in the light of an operation, and always calls within 48 hours to remove the tampon. Applications of iodine to the endometrium ought to be made twice a week at first, and later once a week; and he regards it as very important that the after-treatment be maintained for a sufficient length of time.

Dr. C. C. Lee said he concurred, in the main, in the views expressed by Dr. Hunter. In regard to the symptomatology, however, he thought that the condition was not necessarily characterized by menorrhagia. Metrorrhagia, he believed, is a well-marked symptom in quite a large minority of typical cases; the condition of the uterus being, as a rule, one of general passive congestion. In treating endometritis fungosa he always prepares the case carefully before operating, and when using the curette prefers to give ether. In the choice of instruments he has no hesitation in declaring himself strongly in favor of the blunt curette, as he believes the sharp curette quite as likely to do injury as good, even when employed by the most skilful hand. One of the worst cases of pelvic peritonitis, which he had ever seen, had been directly caused by the employment of the sharp curette by a gynecologist of high reputation.

He does not find it necessary to practise dilatation, as the cervical canal is always sufficiently patulous in these cases. He makes it a rule always to wash out the cavity of the uterus, both before and immediately after using the curette, with a weak carbolic acid solution. In addition, after curetting he applies a solution of strong tincture of iodine to which is added a small quantity of chromic acid, and he had found that this combination has a much more permanent effect upon the uterine mucous membrane than any other with which he is acquainted. One part of saturated solution of chromic acid is added to four parts each of alcohol and tincture of iodine. He objected to persulphate of iron on account of the hard coagula which result from its use. The Thomas curette is the one he always employs.

Dr. B. F. Dawson expressed himself as being heartily in accord with the sentiments of the author of the paper. The

mildness of the dull curette constitutes its great advantage. Dr. Mundé had said that if he is unable to extract any granulations from the cavity of the uterus with the blunt curette, he does not use the sharp instrument; and if such be the case, he could not see why he should ever use the sharp one at all. Only recently he had seen a very aggravated case of pelvis cellulitis which followed the application of the sharp curette. He did not think it necessary to practice dilatation, because the whole cavity of the uterus is enlarged by the growth. Uterine catarrh is a constant concomitant of the condition of fungous granulations, and whenever uterine catarrh exists there is sure to be a patulous os. He thought that ferocity was too apt to characterize the modern gynecologist.

Dr. Hunter brought the discussion to a close. He said he is in the habit of using a light tampon for antiseptic purposes, and that he had not, like Dr. Mundé, found it necessary to employ it for the controlling of severe hemorrhage. Unlike Dr. Wylie, he does not believe it necessary to dilate the cervix, and this dilatation, he thought, is much more likely to do injury than the use of the curette without dilatation. He had been personally taught the use of the Sims' curette by Dr. Sims himself, so that he is well acquainted with the instrument. He had mentioned laceration of the cervix as one of the causes of endometritis fungosa; but as it was not his intention to make his paper an exhaustive one, he had not had time to dwell upon it at length. When there is very great hemorrhage following the use of the curette in any case, he was inclined to think that it is due to the fact that all the growth has not been removed. Like Drs. Lee and Dawson, he also had some instances in which serious consequences had resulted from the use of the sharp curette, and, at the present time, he is treating such a case in which the instrument had been handled by a skilful operator. The blunt curette should always be employed, he believed, in the condition in question; though the sharp curette also has its use, as, for instance, in the removal of carcinoma.—*Medical News*, April 25, 1885.

At a meeting of the Chicago Gynæcological Society, held on March 20th, 1885, Dr. J. Suydam Knox read a paper entitled

“*Influence of Cimicifuga Racemosa upon Parturition.*” After a resumé of the medical history of the drug, Dr. Knox gave the results of his clinical observations in 150 cases of labor—57 primiparæ and 93 multiparæ—in which black cohosh had been exhibited. The average duration of the first and second stages of labor, in normal cases, in primiparæ, was seventeen and three hours respectively. Under the influence of black cohosh, the duration of the first and second stages of labor, in the 57 cases observed, was $6\frac{1}{2}$ and $1\frac{3}{4}$ hours respectively. The average duration of the first and second stages, in normal cases, in multiparæ, was 12 and 1 hours respectively. Under the influence of black cohosh, in the 93 cases observed, the average duration of the first and second stages was 3 hours and 27 minutes respectively. From these clinical observations he drew the following conclusions:

1. *Cimicifuga* has a positive sedative effect upon the parturient woman, quieting reflex irritability—nausea, pruritus and insomnia, so common in the last six weeks of pregnancy, are always rendered less distressing, and often disappear under its administration.

2. *Cimicifuga* has a positive antispasmodic effect upon the parturient woman. The neuralgic cramps and irregular pains of the first stage of labor are ameliorated, and often altogether abolished. In fact, during the first indiscriminate use of the drug in all cases I had the mortification, with a few women, of terminating the labor so precipitately, and without prodromic symptoms, as to be unable to reach the bedside before the birth.

3. *Cimicifuga* relaxes uterine muscular fibre, and the soft parts of the parturient canal, by controlling muscular irritability, thus facilitating labor and diminishing risks of laceration.

4. *Cimicifuga* increases the energy and rhythm of the pains in the second stage of labor.

5. It is my belief that *cimicifuga*, like ergot, maintains a better contraction of the uterus after delivery.

It is my habit, however, to administer from 15 to 30 minims of the fluid extract of ergot after the birth of the foetal head, and I have had but few opportunities of testing this effect of the cohosh. My method of administration has been to give 15 minims of the fluid extract of *cimicifuga* in compound syrup of sarsa-

parilla each night for four weeks before the expected confinement. One fluidounce of the fluid extract of cimicifuga to three fluid-ounces of compound syrup of sarsaparilla—dose, one teaspoonful—makes just the required quantity.—*Med. News*, April 11, '85.

The Bichloride of Mercury Douche in Obstetrics.—There seems little doubt of the great efficacy of perchloride of mercury as a germicide and antiseptic, but there is also little doubt that it is a dangerous remedy. The *New York Medical Record* reports that Dr. Hurlbert of St. Louis stated at a meeting of the St. Louis Medical Society that he had salivated five patients with a bichloride solution (1 to 3000) given as a vaginal douche twice a day. No particulars are given.

On the 6th of last March, Dr. George Peabody read a paper before the Practitioner's Society of New York City on "Toxic Enteritis caused by corrosive sublimate as a surgical application."

Dr. Peabody's attention having been directed to the subject by reading reports of certain cases of this kind in German medical journals, he and Dr. Stevens searched the records of the New York Hospital for the previous 18 months. Accounts were discovered of eleven cases in which the use of the poison as an antiseptic dressing or application was followed by obstinate diarrhoea, which did not yield to the usual remedies, and which sometimes ceased on the drug being discontinued, but which in seven cases was followed by frequent bloody discharges, griping, tenesmus, prostration and death. In three of these seven cases autopsies were made, and in each, extensive diphtheritic inflammation of the large intestine was found.

Not long ago Prof. Stadtfeldt, of Copenhagen, reported a fatal case of sublimate poisoning in the *Cent. für Gyn.* It was a case of retained placenta, and after its manual removal the uterine cavity was douched with a solution of 1-1500. During the administration of the douche the patient suddenly went into collapse, from which she recovered, but diarrhoea and tenesmus with bloody stools set in, and with these symptoms she died in ten days.

Schede, of Hamburg, reports seven other fatal cases with destruction of mucosa of the large bowel. In three of the cases reported by Dr. Peabody an autopsy was made, and the

large intestine was in a condition of extensive diphtheritic inflammation. These facts convey a serious charge against this remedy, and for obstetric practice would at least seem to justify its use being limited to vaginal irrigation.—*New York Medical Record*.

Thirteen Cases of Hysterectomy, with Remarks on Carbolic Spray in Abdominal Surgery.—This is the title of a paper by Dr. Thomas Keith, of Edinburgh, in the *British Medical Journal* for January 31, 1885. Dr. Keith had previously reported 25 such cases. The 13 here reported were operated on during 1884. Of 13 only one died. Besides these during the same year, the ovaries were removed 12 times by Dr. Keith for bleeding fibroids. In all of these 12 cases more or less benefit resulted. This makes 50 uterine tumors—the whole number with which Dr. Keith has ever interfered by abdominal section. Dr. Keith goes on to remark with some pride, but also with characteristic modesty: “So far as I am aware, the results of these supra-vaginal hysterectomies are the best that have yet been obtained; and as these are my first cases of this operation, it is only reasonable to suppose that the mortality will become lower by a longer experience. It seems to me that the reason of this comparative success lies in the fact that no operation was done unless there appeared to be some strong necessity for the doing of it. The tumors were generally large, the patients had suffered, and were more or less broken down by pain and hæmorrhages. No one was operated on in good health or in good condition. No case of pediculated tumor was ever meddled with, simply because I do not consider that operations are necessary for such cases. Almost all were done on account of repeated hæmorrhages and ruined health. The time chosen for operation in the feeble—and most of them were feeble—was a day or two before menstruation was expected. The tumor might perhaps be then at its largest, but the patient had regained more or less force from the losses of the previous period.” In discussing the method of dealing with the attachments of such tumors, Dr. Keith says there is no one way of doing this. Each case must be a law to itself. “A few of the simpler cases may be treated entirely

extraperitoneally. Generally the broad ligaments must be left inside; and sometimes the whole attachment, when there is much enucleation, must be so treated. Sometimes the treatment may be entirely intraperitoneal by means of Koeberle's *serre-noeud*, or it may be left intra- and half extra-peritoneal. I am hopeful that the cautery will yet be the best and safest of all the methods of dealing with some of these tumors. The more I use it in ovariectomy, the more I like it. It is simply perfect, and its employment seems to me to be 'a higher exercise of our art' than the ligature, which, apart from the chances of hæmorrhage, embraces ten times the amount of tissue that is really necessary. That a more perfect way will soon be found I have little doubt." Dr. Keith again asserts his unbelief in the use, or rather his belief in the danger of the carbolic spray in abdominal surgery. It is a strong argument when he says: "If Mr. Thornton gets a fatal result in every third case where he removes a uterine fibroid with his complete and perfect Listerism, spray and all the rest of it, am I to go back to these ways when I get one out of 16 without them? By no means. The antiseptic principle, which I believe in as much as anyone, can be carried out by simpler means than these; and, for myself, I have almost gone back to the boiled water and soda of 20 years ago. It is, unfortunately, a sad fact that, ever since surgery began, the great evil was done by the surgeon himself. It was the willing and tender, though unclean, hand that carried most of the poison into the wounds. It is to this that Lister has put a stop. With a proper antiseptic, a surgeon is now made to be clean in spite of himself, is compelled to have safe sponges, safe ligatures, clean instruments, and, above all, clean fingers. If one be careful enough—and few are careful enough—one may do all this with boiled water and soda. Some such precautions are essential; beyond these, with ordinary care, we need not disturb ourselves much as to what is in the air. Yet it was a pleasant doctrine to believe in, to put the whole blame of a bad result upon some indefinite unknown something in the air—something beyond ourselves. It was no fault of ours; it could not have been helped. Every thing was done that could have been done. I fear we are all

apt to blame place, persons, things, accidents, circumstances,—anything you like under the sun—rather than ourselves.” In view of such results, comment could but mar the effect of such words from this great and good man.

Abdominal Section in Ruptured Tubal Pregnancy.—Mr. Lawson Tait has been following up this method of treatment, and in the *British Medical Journal* for April, 1885, reports three new cases, making in all nine he has thus treated, with only one death. The operations were all done at the time of rupture. In all, a large quantity of clot and serum were found in the cavity. After the removal of the ruptured tube, the pelvis was drained.

Correspondence.

BERLIN, April 16, 1885.

To the Editor of the CANADA MEDICAL & SURGICAL JOURNAL.

The past has been a stirring week here in surgical circles. The German surgical congress held its sitting here from April 8th to 11th. There were two sittings each day. Many papers were read and discussed; but the principal feature of the session was the number of valuable preparations and ingenious instruments exhibited, and the great number of patients shown on whom operations had been performed. The renowned and world-wide famed Langenbeck presided at all the sittings. He is a rather spare, tall man, erect in bearing, and with a mild, benevolent cast of features, which look particularly pleasing under a firm head of silvery white hair. In appearance, as well as in manners, he is most gentlemanly and refined. He listened attentively to the reading of the papers and the discussions that followed, and was most attentive when some young surgeon criticised the “Langenbeckische methode,” or offered some improvement upon it. Forming a striking contrast to him in every respect was the not much less renowned Volkmann, who is of middle stature, broad shouldered, has a large head, covered with long reddish hair, a massive brow with heavy bushy eyebrows, and a cast of features which are easily set in motion. He fanned the life of the meetings. If an unfortunate speaker made a miss, Volkmann was

certain to convert it into a jest that would make the audience roar with laughter ; and if some young surgeon, with the excitement of the moment, would make a sweeping assertion, Volkmann would let fly a biting sarcasm that would make the poor fellow wish himself on the banks of the Congo. This he carried at times to unjustifiable length, and made not a few enemies by his indiscreet and rather arbitrary remarks.

We had a good illustration the other day at Dr. Martin's clinic of the difficulties that oft beset the gynæcologist in diagnosis. A married woman, mother of two children, youngest 16 months old, came complaining of metrorrhagia for the past four months, and during the last six weeks there had been an almost constant loss of blood. On examination, a tumor, the size of a child's head, was found occupying the pelvis, and something was felt passing off from the left of the tissues which was thought to be the uterus. She was narcotized the day after, and thoroughly examined. Dr. Martin now considered he had to deal with an ovarian tumor, probably cystic. After the lapse of a few days, she was again put on the table, narcotized, for the purpose of scraping out the uterus to arrest the metrorrhagia. Now the true nature of the cause was discovered. A septum was found dividing the uterus into two halves, and conception had taken place in the right half, probably about twelve weeks before. The cervix was slit up, the products of conception removed, and the patient has made a good recovery.

During the same week we had another case of abnormality of the generative organs at the clinic. Nature had provided this patient with a double set of organs. She had two uteri, two cervixes, and two vaginæ. She was a spinster, aged 35, of decidedly masculine build and features. Her history was rather a sad one. She had come to Dr. Martin about 18 months before to know if she might marry with her abnormal organs. Dr. M. said she might, but she ought to tell her lover of the state of things. She did, and lost her lover. She now came to be treated for a uterine catarrh, giving the above history, and added that another suitor for her hand had recently come on the scene. She was in a dilemma as to what course to pursue. She feared

if she revealed her condition to this one he would treat her as the first had. She asked some very pertinent questions: that if she were to marry, might she not conceive in both uteri at different periods, and, perhaps, have two confinements in one month. Dr. M. replied positively, *No*, and said that as yet there is not an authentic case in which conception had taken place during pregnancy.

In writing of the Moabite Hospital in my last, I fear I used an expression that may have caused an erroneous impression. It is not built on the pavilion plan, as that is commonly understood, but on the barrack system. The buildings (24 in number) are low, one-storied frame structures, filled in with bricks and boarded on the inside. The grounds comprise fully 18 acres, being about six acres long and three wide, and the buildings are placed along the four sides of the inclosure, at regular and considerable distances apart. Between the back of the buildings and the inclosing wall is quite a strip of land; in front runs a wide gravelled road the whole way round, and the area of ground bounded by the road is beautifully laid out into lawns and parterres, with clumps of shrubbery interspersed here and there. At the north-east corners of the grounds exist several small gardens, one for each of the assistants, druggists, and other officers. Two flower-houses of considerable dimensions, where a great variety of flowers are constantly cultivated, supply all the wards the whole year with green plants. On entering, on the left is the porter's lodge; a little further on is a commodious ice-house. On the right is a good-sized building for the officers, then comes the engine-house which supplies the heat and locomotive power for the whole hospital. The heated steam is conveyed by one large pipe running under ground, from which two smaller pipes go to each building. The kitchen, which is close by, is a model of cleanliness and order, and looks very inviting. All the cooking is done by steam, and a large "Becker's patent" turns out the roasts in appearance and taste all that the eye and sense of taste could desire. In the laundry, a few steps further on, the most ingenious machinery is to be seen, which effects everything, from the simple washing to ironing and folding of the

clothes. There is a building apart for the disinfection of clothes and furniture. In it are two immense ovens, with places for hanging up clothes, in which a moist heat of 122°C . is maintained. This degree of heat *with moisture* has, by experiments, proved to be inimical to the life of micro-organisms. The ventilation of the wards is very thorough. In addition to the two large doors at either end, open spaces, covered in, exist in the centre of the roof, and fresh air is introduced through several perforated zinc plates about a foot from the floor. These are so placed that the air strikes against the heating pipes and is thus warmed before circulating through the room. Dr. Guttman was asked one day what cubic space was allowed each patient. He said "that is a question we need not answer here, for these are 'garden houses' and not hospitals." As one stood in the aisle, with beautiful green lawns in view in every direction, the windowsills filled with flowers in bloom, a sweet fragrance pervading, the swallows flying in and out through the open spaces in the roof, one forgot he was in an asylum for disease, and did not consider, at the time, Dr. Guttman's remark a mere figure of speech. The beauty of this system, apart from the many striking ones that it possesses, is that as the city grows the hospital can be removed to freer quarters, and the cost of removal will be more than compensated by the difference in price of the respective grounds.

H. N. V.

Reviews and Notices of Books.

The Therapeutics of the Respiratory Passages.—
By PROSSER JAMES, M.D., Lecturer on Materia Medica and Therapeutics at the London Hospital Medical College, Physician to the Hospital for Diseases of the Throat and Chest, etc. New York: Wm. Wood & Co.

The methods of treating the numerous affections of the respiratory tract has become by modern usage so diversified that a volume can well be afforded for their consideration, nor could any one better qualified than Dr. James be selected to carry out this object. His numerous writings upon the affections of the throat are familiar to all. Twenty chapters are devoted to

discussing in detail all the most approved modes of managing the local affections of the respiratory passages as well as those traceable to constitutional conditions. It is needless to enter into a more detailed description of the contents. Suffice it to say that it is complete and highly instructive. To the specialist it is of value as conveying the views of one of some eminence in his department, and to the general practitioner it will form a safe guide in the management of diseases he is often called upon to meet and to combat which often requires all his skill.

Insanity and Allied Neuroses.—By GEO. H. SAVAGE, M.D., M.R.C.P. Philadelphia: H. C. Lea's Son & Co.

This little book is perhaps the most readable one that has been published for some years on the above subject. Whilst reading the first few pages, the question is almost certain to arise in the reader's mind as to how far he may be removed from the "borderland" of insanity. It may so happen that up to the time of reading these pages, in some respects at any rate, he considers himself a genius. It is more than likely he will disclaim any such position when he reads that "genius is looked for as the necessary accompaniment of eccentricity," and further, "Eccentric people may belong to two classes at least—those who have some insane inheritance, and those who are passing from insanity into some form of mental disorder." Again, "Want of balance fairly describes the mental condition of many a genius." It may be interesting reading to some who will never pass a pin or horse-shoe without picking it up, and find that these "eccentricities" are worthy of discussion in connection with the subject of insanity.

In considering the causes of insanity, the author very justly remarks that "true education—that is, true development of mind and body—are the best preventives of insanity." He does not at all incline to the view of so-called over-education accounting for its apparent increase. Overwork he considers likely to be followed by evil results only when in direct opposition to the tastes, and under bad hygienic conditions. "Work of a monotonous character," he says, "is injurious, and assists in producing mental disorder."

The author draws attention to a point that is well worthy of consideration in the treatment of young maniacal patients. Many of these cases recover, but when associated in asylums with older lunatics there is very great danger of their contamination; and although apparently quite recovered, they are very likely to have acquired some of the evil habits of their older associates and subsequently to become criminal.

The chapter on Delusional Insanity is full of interest, and shews that these patients are quite up to the scientific progress of the age, many of them having the telephone and microphone associated with their delusions.

The easy, conversational style adopted throughout the entire work renders it one that can be read by the student or practitioner without any apparent effort, which is required in most books on this subject. The few plates that are given are remarkably good, and very suggestive of the conditions described.

We think this work is the best yet published for students' use, and one which should be in the hands of every medical student.

Cocaine, and Its Use in Ophthalmic and General Surgery.—By H. KNAPP, M.D., Professor of Ophthalmology in the Medical Department of the University of the City of New York. With Supplementary Contributions by Drs. F. H. Burworth, R. J. Hall, E. L. Keyes, H. Knapp and W. M. Polk. New York: G. P. Putnam's Sons.

The author of this compilation has brought together into one small volume the results of the observations of a number of experienced surgeons and physicians as to the value of this modern anæsthetic. The drug, since its first introduction only a few months ago, has risen rapidly into favor, and the sphere of its usefulness has been almost daily extended. No doubt it will take further time to determine the limits of its successful application and the objectionable features it may prove to possess. Dr. Knapp tries to show how, at any rate, these points have been eliminated up to the present day. Considering the

mass of material which has found its way into our current literature upon the subject, many no doubt will consider it a boon that some one has undertaken to furnish us with the pith of all this in a condensed shape. As every one is bound to know all about cocaine, every one cannot do better than possess himself of Dr. Knapp's *brochure*.

The Year-Book of Treatment for 1884: A Critical Review for Practitioners of Medicine and Surgery.
Philadelphia: Lea Brothers & Co.

This publication is divided into a large number of separate chapters, each one dealing with a special department of medicine or surgery, and written by an author (English) fully conversant with the subject in hand. Articles from all countries are laid under contribution, and every observation of marked importance bearing upon therapeutics is included. The writer also embodies a general review of the advances that have been made during the year in each particular branch, so that a complete *résumé* can thus be obtained at a glance. The names of the various authors guarantee the value of the work done and the thoroughness of the researches. It is a valuable book for every physician, and one to which constant reference can be made with useful results.

Books and Pamphlets Received.

THE OLEATES: AN INVESTIGATION INTO THEIR NATURE AND ACTION. By John V. Shoemaker. Philadelphia, F. A. Davis.

CLINICAL LECTURES ON SCROFULOUS NECK. By T. Clifford Abbott, M.A., M.D., &c. And on **THE SURGERY OF SCROFULOUS GLANDS.** By T. Pridgin Teale, M.A., M.B. London, J. & A. Churchill.

HANDBOOK OF DISEASES OF THE SKIN. Edited by H. von Ziemssen, M.D. Illustrated. New York, Wm. Wood & Co.

ANEURISMS OF THE AORTA, with especial reference to their position, direction and effects. By Oswald Browne, M.A., M.B. London, H. K. Lewis.

TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION. Vol. I. Edited for the Association. By Austin Flint, Jr., M.D. New York, D. Appleton & Co.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, March 6th, 1885.

T. G. RODDICK, M.D., PRESIDENT, IN THE CHAIR.

Congenital Looseness of all the Joints.—The PRESIDENT exhibited a girl aged 4 years presenting this condition and allowing of the production of partial dislocation of all the larger joints. Talipes of the feet could also be simulated.

Decidual Cast of the Uterus.—DR. ALLOWAY exhibited a very perfect decidual cast of the uterus at the end of the sixth week of gestation.

Neuroma.—The PRESIDENT shewed a neuroma dissected from an amputated stump.

DR. HINGSTON said he believed that the bulbous end of a nerve was a frequent cause of pain in the stump, and related a case in illustration.

Case of Pulsating Empyema.—DR. GEO. ROSS read a paper on this case. (*See page 606.*)

DR. HINGSTON said that when a student, in 1851, at the General Hospital, he saw a case of pulsating empyema, accompanied with metallic tinkling synchronous with the pulse, and evident at the surface of the back. The late Dr. Holmes, then clinical teacher, said at the time that it was the first case of the kind he had ever seen.

DR. GEO. ROSS did not see how you could possibly have pulsation communicated through the fluid in a case of pyo-pneuthorax. The physical conditions which would cause amphoric phenomena would prevent pulsation being observed. To observe the latter, the sac must contain fluid alone.

Cases in Practice.—DR. SHEPHERD related the peculiar abnormalities seen by him lately in a healthy young man aged 22, who has transposition of the viscera of the chest and abdomen. The right testicle hangs lower than the left.

Stated Meeting, March 20th, 1885.

T. G. RODDICK, M.D., PRESIDENT, IN THE CHAIR.

DR. A. L. SMITH shewed the following cases of skin diseases: 1st, *Tinea Tonsurans* in a state of kerion, the ulcerating patch being about $3\frac{1}{2}$ inches in diameter. 2nd, *Specific Lupus of the face*; the patient, a woman, was doing well under applications

of acid nitrate of mercury. 3rd, *Specific ulceration* on the leg of the last patient's husband. 4th, *Tinea Versicolor* over the chest of a delicate young woman.

Case of Abdominal Section.—DR. TRENHOLME, who performed the operation, said this case was of some interest, inasmuch as a definite diagnosis was not only impossible before the operation, but the portions of the tumor removed, and now before the Society, have not yet been definitely determined as to whether they are the remnants of an extra-uterine foetation or of a dermoid cyst. A report upon their character will be brought before the Society at a subsequent meeting. The following are brief notes of the case:—

The patient, Mrs. O., of Ontario, a well-developed, fleshy woman, 46 years old, was married 31 years; no children. One abortion 25 years ago. For nine years after abortion, suffered at menstruation. Twelve years ago had inflammation of the bowels. Ten years ago had another attack of a similar character. After this, enjoyed fair health till change of life occurred, seven years ago. Since this last period, was pretty well up to October last, when she had what was supposed to be inflammation of the bowels. Her health from this time onward not good, when, about the beginning of the present year, she was again taken ill with very severe inflammation of bowels, though, she said, the disease seemed lower down in her body, accompanied with a good deal of irritation of the bladder and decrease of quantity of urine. Menstruation returned again last fall, but was scanty and at irregular intervals also, frequently accompanied by severe pains. *Present state.*—Debilitated appearance, pasty color; irritable stomach; scanty urine (2 or 3 ozs.), high-colored, no albumen; bowels regular; pulse weak (shabby) and rapid. Tumor felt over hypogastrium; per vaginam, tumor over brim of pelvis, larger than a foetal head. Uterus $2\frac{1}{4}$ in., and carried upward and backward. Tumor and uterus found closely united, but thought moveable. Diagnosis, fibro-cystic tumor of uterus most favored, but held to possibility of tumor being ovarian. *Operation.*—Assisted by Drs. Hingston, Kennedy, Perrigo, and Armstrong, made usual exploratory incision, and found no walls to cyst. Removed three gals. of fluid, and then found the debris of a dead foetus, which, with the placental debris, was scooped out with the hand. No ligatures were required to arrest bleeding, which was very slight. Abdominal cavity was well cleaned and washed out. Uterus and ovaries were normal. *Result.*—Patient never overcame the shock, and died twenty-two hours after operation. No post-mortem was permitted.

In reply to questions, DR. TRENHOLME said the woman's history did not indicate pregnancy, and that before operating her temperature was normal.

Several members who examined the debris gave it as their opinion that there were no foetal structures present. The bony piece was thought to be part of an ossified cyst wall. There was no sign of any of the long bones.

Sarcoma of the Testis.—The PRESIDENT exhibited the specimen and related the following history of the case: Patient, aged 48, had an attack of orchitis first in September, 1883; no cause could be assigned for this. He rode much on horseback in the woods, but there was no history of injury. In July '84, he had another attack of inflammation in that testicle, which did not reduce in size. Last October it became very bulky. There was no disease in the cord. He was anæmic. No history of syphilis. Had had gonorrhœa ten years ago. Iodide of potassium and mercury was given for a month. After this, Dr. Bell attended him through an attack of phlebitis of the left leg. Sarcoma of the right testicle was diagnosed. Dr. Roddick removed it, and a microscopic examination revealed it to be of the large round-celled variety of sarcoma. The tumor was as large as the fist. Slides prepared by Dr. Wilkins were shown under the microscope.

Large Intra-uterine Myoma.—DR. WM. GARDNER exhibited the specimen and related the case. Patient, aged 42, very pale, came to him with a history of severe hemorrhages for the past two or three years. No pain. An examination caused a great hemorrhage. The tumor could easily be felt in the hypogastrium, and by the vagina, in the uterus. After dilating well with tents, it was removed in pieces by means of the spoon saw. The operation lasted an hour and a half. Not more than five or six ounces of blood was lost. A good many shreds came away after. The uterus was thoroughly irrigated and drained with the double tubes. These were sutured to the lips so as to keep them in place. After eight days they ulcerated away, and were allowed to remain out for 24 hours, when the temperature rose to $101\frac{1}{2}^{\circ}$. The os was then opened, and three or four ounces of bloody fluid escaped. The tubes were again used as before. The patient made a good recovery. Dr. Gardner said that the irrigation was troublesome, but on it rests the success of the operation. Lawson Tait has lost 50 per cent. of these cases.

DR. TRENHOLME said he had removed several of these tumors and never lost a case.

DR. SMITH asked if ergot had been given in this case for a long time as recommended.

DR. GARDNER replied that the patient's history and blanched condition indicated immediate operation. Ergot could not be depended upon, and, besides, the woman was poor and could not afford to lie up.

The PRESIDENT thought the woman's condition justified operative interference.

Removal of a Uterine Myoma with the Cephalotribe.—DR. HINGSTON said that two weeks ago a lady came to him from the country suffering greatly from a large uterine myoma, which did not cause hemorrhage. The tumor was about the size of an infant's head, and sessile. He had seen Sir James Simpson use the cephalotribe in a similar case, so thought he would try it here. One blade was easily entered, but much coaxing was required to get in the other. A good bite was secured, and the screw applied. In this way one-half came away. Again the blades were applied, and half the remainder came away. Now the uterus was drawn down and out, and the rest of the tumor shelled out with the fingers. Patient made a good recovery. Injections of Condy's fluid were used.

DR. GARDNER said he believed the vulsellum and spoon were the best instruments to use in these cases.

DR. TRENHOLME remarked that both in this case and Dr. Gardner's an incision through the mucous membrane covering the tumor might have been all that was needed, as this simple operation has at times relieved pain and arrested hemorrhage.

DR. SHEPHERD read a paper on "*The Musculus Sternalis and its occurrence in Anencephalous Monsters.*" He stated that the musculus sternalis was a supernumerary muscle which has always excited a great deal of interest among anatomists, and that its proper morphological significance was not yet fully determined. It was seen in about three or four per cent. of ordinary individuals, and its fibres generally ran at right angles and superficial to the great pectoral. It was often bilateral but most frequently unilateral, and was subject to many variations. Frequently it had no attachment to bone, but lay superficial to the great pectoral and was attached at either end to fascia. It often was inserted into the costal cartilages. It might be continuous above with the sternal origin of the sternomastoid, and below with the fascia of the external abdominal oblique. Again, it might be continuous with the pectoralis major, and be associated with deficiency of that muscle. It

was often of small size, but occasionally it was quite a strong muscle, and could be seen under the skin in the living. Dr. Shepherd had seen it measuring five inches long, two and a half inches broad, and two and a half inches thick. For years it was considered to be a remnant of the rectus abdominis, which in many animals extends from the pubis to the top of the sternum, and was called the *sternalis brutorum*. This view had long ago been given up because the rectus abdominis lies in a plane deeper than the great pectoral, and is never superficial to it. Bourienne many years ago held that it was a prolongation downwards of the sterno-mastoid, a view still held by Henle and others. Hallett and Wilde regarded it as belonging to the same group of muscles as the platysma, and Prof. Turner, of Edinburgh, considered it to be one of the representatives in man of the great panniculus group which exists in most mammals. Darwin also held this view in his work on the *Descent of Man*, after referring to the views of Prof. Halbertsma, M. Testut and Prof. Bardeleben.

Dr. Shepherd stated that Prof. Cunningham, of Dublin, has lately in five cases traced the nerve supply of the musculus sternalis to the anterior thoracic nerve, and that he, believing that the nerve supply was the best indication for the proper classification of muscles, considered that the musculus sternalis belonged to the pectoral group. Prof. Cunningham also suggested that this was a new inspiratory muscle appearing in man, and that it was his impression that it occurred more frequently in females, due possibly to costal inspiration being more pronounced in them. Mr. Abraham, of Dublin, first pointed out, last year, that this muscle was very common in anencephalous monsters, as he had found it in six out of eleven specimens examined. Mr. Abraham looked upon it as probably an aberrant portion of the great pectoral muscle.

Dr. Shepherd said that he had examined six anencephalous monsters which were in the museum of the Medical School of McGill University, and wished to place the results of his dissection before the Society. In each monster he had found a well-developed musculus sternalis. In three the muscle was double; in two continuous above with the sterno-mastoid, and in several it arose from the manubrium sterni and was inserted into the costal cartilages. In all the cases there was a deficiency of the great pectoral muscle on the side where the supernumerary muscle was found, the abnormal muscle apparently taking the place of the absent portion of the pectoral. In several the muscle was of large size, and in part continuous

with the fibres of the great pectoral. Nine muscles, in all, were found in six monsters, as three had double muscles. Dr. Shepherd had successfully traced the nerve supply of these muscles in all but two—that is, seven of the muscles were supplied by the anterior thoracic nerve; the nerve entered the muscle in its deep surface and could be traced back over the lesser pectoral through the costo-coracoid membrane to the internal anterior thoracic nerve.

Dr. Shepherd remarked that it was a curious fact that this muscle should be supplied by a nerve which is at so great a distance from it, and not by the intercostal nerve, which in several cases pierced the abnormal muscle without giving any branches to it. He also stated that he had formerly held that the *musculus sternalis* belonged to the panniculus group, but that these dissections had caused him to alter entirely his previous views as to its homology, and that now he had little doubt that this muscle belonged to the pectoral group because: 1. Its nerve supply. 2. When present the great pectoral is generally deficient. 3. Its continuity in many cases with the great pectoral. 4. That it was in the same muscular plane as the great pectoral. Dr. Shepherd said that it was his belief that the nerve supply was the best guide we possessed for determining the homology of a muscle.

Dr. Shepherd was unable to explain why this muscle should be so common in anencephalous monsters, except that in these undeveloped beings there was a greater tendency to revert to previous conditions; but he said it was difficult to reconcile the fact that this muscle was an aberrant portion of the great pectoral and a reversion to some preëxisting muscle, as no known existing arrangement of the pectoral group in the lower animals at all resembles the condition found in these monsters. He also stated that if this muscle was an aberrant portion of the great pectoral which had no animal representative, then Prof. Cunningham's theory that it was a new muscle appearing in man had some degree of probability. Dr. Shepherd said he was not prepared to accept this explanation, but awaited further light and further knowledge of comparative anatomy before pronouncing definitely on the morphological significance of the *musculus sternalis*.

After the reading of the paper, the specimens were exhibited to the Society.

DR. HENRY HOWARD said that Dr. Shepherd's demonstration was a further proof that man evolved from a lower animal, and did away with the theory of the creation of man as he now is.

CANADA

Medical and Surgical Journal.

MONTREAL, MAY, 1885.

VACCINE AND VACCINATION.

The occurrence of smallpox in this city has naturally re-directed attention to the all-important question of vaccination. There can be no question that the subject needs here a great deal of study, and requires other and more complete arrangements to be made in order to secure anything approaching to a satisfactory protection of the citizens. We have learnt with some surprise that, whilst it has been thought that of late years vaccination was being pretty generally practised in all quarters of the city, on enquiry being made at some of our largest institutions for children, by far the greater number of these have never been vaccinated. This applies chiefly to the French-Canadian population who have never quite got over the crusade of the anti-vaccinationists waged some years ago. Now, if the spread of smallpox in our midst is to be arrested—if we are not to become a prey to such frightful epidemics of this disease as we have already suffered from—it must be by the carrying out of systematic vaccination. The objections which were urged against the reception of vaccination at the time we have above alluded to were founded chiefly upon untoward results which were observed in a certain number of persons then subjected to the inoculation. These consisted in badly inflamed arms, severe lymphangitis, sometimes with axillary abscesses, occasionally erysipelas, and multiple subcutaneous abscesses. It was held that these unfortunate effects resulted from the employment of defective humanized lymph—that is, lymph which had by some means become possessed of septic properties. To guard against this, pure bovine virus was obtained from an original case of vaccinia in a heifer, and has been propagated through successive

animals ever since. This source of supply has been largely used by the public vaccinators and the physicians of this city and the Province generally with great satisfaction. Some have used the bovine virus direct, others have preferred the lymph one remove from the animal. It is needless to say that in order to ensure the vaccination of all children and unprotected persons it is necessary not only that the public admit the principle, but that they also have confidence in the purity of the lymph. It is very unfortunate that, just after the outbreak here, doubt was thrown upon the quality of the supply issued by the Board of Health. Bad results were reported from some of the public institutions where children had been vaccinated by the health officers. A few cases of erysipelas and severe local troubles were also heard of from general practitioners. The facts were investigated by the chairman of the Board, together with a few physicians whose co-operation had been requested, and as the conclusion seemed warranted that the lymph must be accused of having in some way conveyed septic matter, it was decided to cease all vaccination until such time as a perfectly pure article from a fresh and thoroughly reliable source can be provided. We commend the prompt action of the Board, and hope that, when the officials resume their good work, they will not be hindered by the unfortunate accident which has led to a certain amount of necessary delay.

PROVINCIAL MEDICAL BOARD.

The semi-annual meeting of the College of Physicians and Surgeons of the Province of Quebec was held at Montreal on the 13th inst. The President, Dr. Lemieux, in the chair. There was a good attendance of governors, among them the Hon. Dr. Robitaille, ex-Lieut.-Governor of Quebec.

Reports from assessors of McGill, Bishop's, Victoria and Laval (Quebec and Montreal), were received and adopted.

The reports from the Board of Preliminary Examiners was read. Sixty-two students presented themselves, of whom 29, who went up for the first time, were successful, 10 who presented for the second time were successful, 17 were rejected on certain branches, while 6 were rejected for general deficiency.

The report of the agent of the College, Mr. Lamirande, was read. During the past six months, the College gained six cases, lost one, and five are still before the Court.

A petition from Mr. Tierney of West Farnham to be allowed to continue to practice medicine, on the ground of his having done so for 25 years, was refused, the College not being possessed of any such power.

A report on certain charges made against the College agent, Mr. Lamirande, was presented. It stated he was not free from blame, had acted beyond the scope of his authority, and recommended that his duties be more clearly defined.

A motion was made by Dr. Durocher, seconded by Dr. Rinfret, suggesting that at the preliminary examination for admission to study, the papers of candidates should not bear the name of the writer, but that of a *nom de plume*.

A report was presented from a committee appointed at last meeting to examine the financial condition of the College. Its consideration was postponed till next meeting.

A notice of motion was given to place the collecting of the annual dues again in the hands of the Registrar, and for this and his duties of registrar pay him \$400 a year.

On the report of the committee appointed one year ago to investigate the charges made by Dr. Lachapelle against Victoria College, the consideration of which was postponed from the last meeting, being brought forward, it was moved by Dr. Marsden, seconded by Dr. L. Larue, that the report of the committee be received. This was carried, and there being no discussion thereon, the College proceeded to other business.

A notice of motion authorizing the President in certain cases to issue an interim license was brought forward and carried unanimously. The notice of motion for a Central Examining Board received a six months' hoist.

MONTREAL GENERAL HOSPITAL.—Dr. Jas. Gray has resigned the position of medical superintendent and Dr. Wm. McClure has been appointed his successor. It is thought that the Hospital has secured a very capable and efficient officer. The annual term of service of the resident medical officers expired on the 1st May, and the following gentlemen have been nominated (after special examination) for the coming year, viz., Drs. Finley of Montreal, S. Gustin of London, Ont., and D. W. Eberts of Chatham, Ont. These gentlemen are all graduates of McGill, '85, and have made for themselves very high records.

—Ald. Gray, Chairman of the Board of Health, has sent in his resignation to the City Council. This step has been forced upon him by the obstruction offered by the Committee to his re-

commendations for the good management of that department. We sincerely hope that the worthy alderman may yet be induced to reconsider his present determination on receiving the unmistakable support of the City Council itself; that of the public and the medical profession he already enjoys to a remarkable degree. His energetic action in the recent outbreak of smallpox is just what we might have expected of him. It will disgrace the Council if they thus lose the most efficient head of this important civic department they have ever had.

THE CANADIAN MILITIA GAZETTE.—The military activity at present prevailing in Canada has resulted in the production of the first number of the *Canadian Militia Gazette*. We are glad to see that the medical department receives due attention, and that we are promised a careful watchfulness over the interests of this important branch of the service. Every one knows that the medical staff of our militia has been sadly neglected, and the present crisis has served to bring out its defects more clearly. There is ample scope for the *Gazette* to do a good work in exposing these and seeking to have them remedied. We advise all to send their names as subscribers. It is published at Ottawa.

—The American Medical Association held its 36th annual meeting at New Orleans on April 28th and following days. Amongst the business transacted was an important change in the arrangements for the forthcoming International Medical Congress to be held in 1887. The committee originally named, and who presented the invitation to the Copenhagen meeting, have been acting as an Executive Committee, and have already published a list of officers of the congress and its sections. It has now been decided that they are to add to their number thirty-eight members, one from each State and Territory, the District of Columbia, and the army and navy. This enlarged committee are then to proceed to revise and correct the lists previously published in all the journals. It is to be hoped that this will not lead to confusion and delay.

GLYCEROLE OF CELERY COMPOUND.—This safe mixture (containing no opium) for the relief of infants teething and for adults suffering from nervousness, headache, etc., supplies a want long felt by the profession, and should meet with their hearty support, as its advantages over the strong narcotics will be at once apparent to every physician. *Celery Compound* has been thoroughly tested and approved by the head nurse at the Toronto Infants' Home and Infirmary, and strongly recommended by her.