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ART. VIII.—*Valedictory Address delivered to the Students in the Faculty of Medicine, at M'Gill College, on Wednesday, May 8, 1850, by* A. F. HOLMES, M. D., *Professor of Medicine.*

GENTLEMEN,—Before closing this ceremony, and as a Valedictory to you, who, having terminated your course of study, are about finally to leave us, permit me to call your attention to the Oath you have just now severally pronounced. The solemnity of a promise cannot fail to be increased by being attested by an appeal to the Almighty; and the feeling of responsibility to be proportionately increased. It must, however, be a considerable relief to the mind of one who feels the awfulness of failing under such circumstances, to know that by the Oath, nothing more is required of him than the performance of such duties as his own mind will tell him are in accordance with the honest and upright discharge of his duties as a physician. To exact an oath of you to follow a certain conduct seems almost supererogatory; since to exercise your profession in a cautious and upright manner—to care for the safety and comfort of your patients, and not to use the opportunities your profession may give, for the unnecessary or careless divulging of their secrets, especially where this may tend to their injury or disparagement—all these are nothing more than every well-principled man will feel disposed to make the rule of his action. Again, we ask of you to keep an affectionate remembrance of the University whose children you are become, so as to desire her advancement and to promote it if you can. In this, also, there is nothing that might not be expected to be the spontaneous outgoings of your minds, inasmuch as you have become incorporated with the University: its honor is reflected upon you, and the more eminent it becomes, the more satisfaction you will feel in belonging to it. We do not wish, therefore, that you should consider that this day severs the connection between us—that it should be as if it had never been; but we wish you should feel a kindly interest in her welfare and progress, and manifest it as occasion may allow, by any good offices which it may lie in the power of your hand to do: in fact, that the appellation "alma mater" so commonly applied in reference to seats of learning, should be applied and felt in regard to ourselves.

While pointing out, however, the accordance of the Oath with what you will at once allow to be the correct and necessary deportment of a right-minded individual, there are included in some of the parts certain duties, which the required brevity may render less perspicuous to your minds. I shall, therefore, detain you a short time to notice one or two of them; all of them, however, being matters of more importance to your own advancement, than to the interests of this Institution, in which is again seen the fostering arms of Alma Mater.

Firstly, then, you will fulfil your promise of persevering "in omnibus gratiis animi officiis" towards this University, by paying attention to your own

advancement in the scientific knowledge of your profession, and by keeping pace with its improvement. You will hereby assure most certainly your own elevation, and when elevated, the University will look with pride upon you as its Alumni. It is very erroneous to conclude, that once possessed of the Doctorate, you are freed from the labour (or I should say, pleasure) of study. On the contrary, Medical Practice is a continual study, and personal observation and research should always be checked and verified by comparison with the observations of others. It hence becomes a duty to keep up with the constantly changing, and generally (if not always) improving aspect of the science. A few years of neglect throws one lamentably behindhand; and recurring to the subject, one finds oneself a stranger in a field formerly well understood. This is the case not only of those parts of medicine less immediately practical, as Chemistry and Physiology; but in the most practical parts, great disadvantages attend the neglect of following out the improvements, which the zeal and labour of the profession are constantly suggesting. I do not confine my recommendation simply to some new method of operating, or to the use of some newly-discovered medicine, but generally to becoming acquainted with all the changes, theoretical or practical, wrought from time to time in the opinions, and consequently in the practice, of the Profession.

To shew you the disadvantages that would attend the neglect of keeping yourselves *au niveau* of the progress of knowledge, let me glance at some of the changes that have occurred in regard to practical medicine within a few years,—which are not few, in regard to opinions held, or medicines prescribed. I do not mean to say that a change is always an improvement: on the contrary, we sometimes retrograde; but yet I hold that we are still bound to acquaint ourselves with such alterations of medical doctrine, even if we do not mean to test their accuracy.

(*a.*) The first great improvement of recent years which I shall notice, is the discovery of the excito-motory nervous system, and its application to pathological phenomena. It may be said that this is more properly a physiological improvement; but not so: it is equally or more important in its bearings upon pathology and practice. By it, irritations are reflected from one part to another, and reference to it will enable us often to trace diseases to sources which might otherwise have remained unsuspected.

(*b.*) Another great change which has come over medical opinion of late years is the revival of the Humoral Pathology, at least to a considerable extent. When I was a student, this doctrine was supposed to be one of the proofs that we were wiser than our forefathers, and was altogether rejected as a mere speculation without a basis. Whoever, however, now looks into the more recent works treating of Fever, of Puerperal Metritis, of Gout and Rheumatism, &c., will find that the causes of diseases are attributed to changes in the blood, and that this is a revival of the once exploded Humoral Pathology. It is true that the doctrine, as revived, rests upon observation and facts, while, as emanating from Hippocrates, it was only a happy conjecture. Yet the history of this doctrine should teach us a lesson,—not to be too hasty in rejecting what is not quite in accordance with present views, and to remember that we are not infallible. In fact, it is rather humiliating to look back into the history of medicine, and to see the neglect of great discoveries, and frequently the opposition to the

introduction of great improvements. The case of Inoculation, and more recently of Vaccine, may serve to shew the one; and the long neglect of Percussion as a means of diagnosis in diseases of the heart, the other. It was about the middle of last century (1761) that Aumbruzzer published his important discovery (unquestionably, says Dr. Forbes, one of the greatest improvements ever made in Pathology), and it was not till it was recommended by Corvisart, many years after the present had commenced (1808), that its value became generally known.

(c.) A third subject which may illustrate the variable condition of our doctrine, and shew the necessity of paying attention to it, is the nature of Fever—to which I shall allude chiefly to notice the apparent likelihood of the breaking down of what once seemed one of the best established distinctions among diseases, viz., that between common continued and eruptive Fevers. You are aware that it is now well known that in the progress of common continued as well as typhus Fevers, a rash appears at a certain period, having peculiar characters assimilating those fevers to the nature of an Exanthema, and consequently bringing all idiopathic fevers within the same category. I shall again stop to shew the difficulty there often is at one period in drawing attention to a subject which at a subsequent period is acknowledged as important, and becomes universally received. Years ago, about the latter third of the last century, Burserias pointed out the existence of this rash, and insisted that common Fever should be classed among Exanthema.

There is another point connected with Fever which I may remark upon. For years after I graduated, it was the received opinion that Continued Fever, however diversified in appearance or intensity—whether mild or severe, synochus or typhus—was always the same disease, identical in cause and nature. In the works which are still principally referred to we find this opinion. Consult the Cyc. P. M.—Tweedie's Lib. of Med.—Watson's Lectures—and you find this doctrine promulgated. Yet now we have writers who assert the non-identity of different cases of continued Fever; and, under the names of typhus and typhoid Fevers, we are taught that there exists two diseases,—distinct in their origin, their symptoms, and their effects.

If time permitted, I might bring to your notice many more instances of important improvements, or, at any rate, important alterations, in medical doctrine, which have taken place within the last few years; among which the discovery of what is commonly called Bright's Disease is not the least important; but I shall only finally allude to the vast improvement introduced into practical medicine by the conjoined operations of Auscultation and Percussion.

It is now about thirty years since Laennec first announced his great discovery to the French Academy, and it is much less since the practice of Auscultation has become general. Like most other improvements, it met with opposition at its first introduction; but this has now quite disappeared, and its only obstacle is that which it shares with all other objects of pursuit, the labour necessary for acquiring expertness in its application.

It has not only given precision to our diagnosis of diseases of the chest: it has led to the discovery of others not before suspected.

I might extend this detail of improvements by referring you to the numerous means of combatting disease which have

been added to our list within 20 years. I might refer to that most important and unexpected means of removing the dread and horror of operations,—the use of Ether and Chloroform. I might point out improved modes of operating and treating surgical complaints, and in like manner advert to the many improvements in obstetrics; but it is unnecessary, as I have adduced sufficient to bear out the recommendation I made to you, of not standing still while the tide of medical improvement is hurrying past you.

If I have succeeded in impressing you with the propriety of not lagging behind in the advance which your profession is continually making, I shall point out to you one easy means by which you may always know what is doing in the world of Medical Literature. It is to take one or *more* of the Periodicals which are now so numerous and so low-priced, that no one is justified in remaining in ignorance, with so easy a method of acquiring information. Many of you, no doubt, will fix your residences in country parts, where you may have little opportunity of communion with other practitioners, and you will therefore be very likely to become "rusty" in regard even to the knowledge which you now have, and much more in regard to that which is being developed every day. The best way of preventing this is to take a periodical whose pages contain a condensation of the mass of new matter which is monthly and weekly poured upon the profession. The practice of reading such works may have another benefit: it may stir you up to communicate the results of your own experience, and many valuable facts and observations may thus be saved and rendered useful; and hereby you will be fulfilling in some measure the duty which I pressed upon you, viz., that of becoming a credit to the University.

ART. IX.—*Contributions to Clinical Medicine. by* ROBT. L. MACDONNELL, M.D., *Licentiate of the King and Queen's College of Physicians, and of the Royal College of Surgeons, Ireland; Lecturer on Clinical Medicine, University of M'Gill College, Physician to the Montreal General Hospital, &c.*

No. 3.—*Extensive Encephaloid Disease of the Left Lung, attended by unusual symptoms: with observations.*

March 2nd, 1850.—I was called to attend Miss ———, aged 17, daughter of Captain ———, the history of whose illness has been furnished to me at great length by her father, from whose notes I have condensed the following account. Two years before, she caught cold, having sat in damp clothes for a whole day; the catamenial discharge, which had been just established, was suddenly arrested, and did not appear for five months; she was attacked with pain in her left side, back, and top of the left shoulder. These pains continued, and were followed by difficulty of breathing, and inability to lie upon the right side, but *without cough or expectoration.* After some months a small tumour appeared above the left clavicle, somewhat painful to the touch, and to which, tincture of iodine was applied by her medical attendant. In the month of July she wes sent to Upper Canada for change of air, but derived no benefit from it, and returned to Montreal in September, much worse. The tumour noticed in the neck had become enlarged, although not yet conspicuous; but it was painful, and this sensation extended up along the side of the neck. At this period her father noticed *slight ptosis of the left eyelid, and contraction of the pupil of that eye,* "and the iris did not expand and contract equal to the other, in the transition from light to shade." "During the winter of 1848-49, she complained

much of pains in her arm and shoulder, particularly at night, and often groaned in her sleep; yet she went out, and her appearance, occupations, and amusements were as usual." "In the spring of last year," continues her father, "I first observed the left arm to have shrunk or withered conspicuously, yet the tumour in the neck had not much increased in size." The following summer was spent in Upper Canada, during the most part of which, she suffered greatly from pains in the left side of the chest, in the back and shoulder, and from debility and dyspnœa. She returned to Montreal last September, so altered in appearance that her father hardly recognised her; she staggered into the hall, "a poor emaciated creature, with a ghastly countenance of a blueish green colour. *She had upon her a constant hacking cough*, great shortness of breath, had lost all appetite, was reduced to a skeleton, and so weak, that she sank upon the bed, whence she did not rise for three weeks."

She was now seen by a physician of this city, who prescribed cod liver oil and the local application of iodine to the tumour. "From this time her health fluctuated a good deal, and," adds her father, "Jan. 9. Favorable symptoms of change in my daughter's health; was enabled to use her left arm, of which she had lost the use for two months." Jan. 10. A violent fit of dyspnœa set in, accompanied by hysteria and delirium. The journal from which the above quotations have been taken, goes on to say, that up to March 20th many serious attacks of spasm have been staved off by your prescriptions, and all have ultimately yielded to them; but, with her increasing weakness, the spasms are more frequent, and apparently more dangerous.

Present State.—The attention is immediately attracted by a large tumour on the left side of the neck, which protrudes upwards from the thorax, through the space bounded by the clavicle in front, and the spine towards the middle. This tumour is of an irregular shape, somewhat globular, uneven on its surface, everywhere resisting, with the integument tense, shining, and œdematous. It is quite dull on percussion, and no pulsation, bruit, or thrill are perceptible. It is not painful to the touch, nor is it the seat of any *constant* pain, though *shooting* pains occasionally proceed from it downwards to the fingers. The surface of the tumour is traversed by large tortuous veins, which anastomose freely with similar veins on the left side of the thorax, the left arm, left side of the neck, cheek, and left side of the forehead. The tumour has by its pressure, produced paralysis of motion and sensation of the left arm, and the pulsation of the ulnar, radial, and brachial arteries, is completely obliterated. The whole of this arm and corresponding part of the chest are extremely œdematous.

Physical Signs.—The anterior portion of the left side of the chest is full and prominent, and is continuous with the tumour, there being no depression to mark the supra and infra-clavicular spaces: the clavicle is dislocated forwards, its sternal end projects nearly an inch in front of the sternum. The left side of the chest does not move in inspiration; its intercostal spaces are obliterated, and an extremely dull sound with resistance is elicited by percussion from the clavicle to its lowest part, and the same dulness extends all over the side behind and laterally. The respiration is *bronchial before and behind, and there is also bronchophony*, but not the least râle of any kind. The

upper portion of the right lung in front is clear upon percussion, but from the mammary region downwards it is quite dull. Behind, the respiration is loud and puerile, and without rale. All over the right mammary region the impulse of the heart can be seen and felt; its impulse is extremely abrupt and violent, and both sounds are accompanied by a *loud sharp ringing soufflet* of a peculiarly musical and metallic character, quite unlike anything I have ever heard. The apex of the heart strikes towards the right axilla. The right hypochondrium yields the usual dulness. *There was no increase of hepatic dulness below the ribs.* The left side of the chest *appears* to be increased in size, but I have not yet had an opportunity of determining this point. The respiration is short, about 40. The inspiration is accompanied by great action of the intercostals of the right side, the expiration is accompanied by a *short stridulous grunting noise.* During the performance of inspiration the larynx (which is pushed towards the right side) is drawn across the mesial line to the left side. The voice has never been affected, and except during the severe attacks of dyspnœa, there is no stridor. The voice is naturally œgophonic. *She has no cough, nor does she expectorate any thing. She has never had hœmoptysis, nor has she at any time had red currant jelly-like expectoration; but she is subject to frequent attacks of epistaxis, which invariably proceed from the left nostril.* At times this is rather profuse; at other times it is only sufficient to cause a blocking up of the nostril. The beating of the heart is frequently very troublesome; the pulse is small, about 120, sometimes more frequent, and sometimes less so; it is not intermitting nor irregular. There is *partial ptosis* of the left eyelid, which sometimes proceeds so far as almost to conceal the eyeball, and there is also *contraction* of this pupil, though this eye is quite as sensible to light as the other, and she can read with it quite as well. No matter to what amount of light this eye be exposed, the pupil is never dilated to more than one half the extent of the other. She never suffers from headaches, flashes of light before her eyes, noise in the ears, or frightful dreams. Occasionally her symptoms assume a hysterical character. Her tongue is clean, appetite pretty good, no dysphagia, stomach seldom sick, bowels regular, urine secreted in natural quantity, skin moist, body greatly emaciated. *No pains in the chest.* Catamenia absent. During the prevalence of easterly winds, and before a fall of snow, her friends remark, that her countenance brightens up, she appears quite healthy, and her spirits improve; these are but the precursors of an extremely severe attack of dyspnœa, which is sometimes, however, warded off by the administration of an anti-spasmodic.

April 24th. Since the last account, the tumour has been gradually extending across the neck; it has pushed the larynx, trachea, and thyroid gland completely over to the right side, and now occupies the median line, and extends beyond it. *The right arm is now partially paralysed, and the pulse at the wrist is perceptibly smaller than it used to be; œdema and varicose veins occupy the right side of the chest, and the right arm is also becoming œdematous.* Since the last report, several severe attacks of dyspnœa and palpitations have occurred—sometimes almost threatening to terminate her existence. It is noticed, that these attacks are invariably preceded by a temporary amendment—her spirits become cheer-

ful, her strength increases, and the countenance becomes animated: the colour of the face, which is usually sallow and livid, changes to a bright rosy hue; but at the same time it is quite apparent that the tumour undergoes marked augmentation, and that the tortuous and varicose veins become more enlarged and turgid. Her father is positive that he has noticed a connection between these phenomena and the state of the atmosphere, and that they occur invariably in thick damp weather, or previous to a snow storm. On two or three occasions, she became delirious, and her stools and urine were voided unconsciously. The appetite remained pretty good, and the bowels were generally regular. She slept well when free from spasm, and had latterly suffered but little from the pains in the chest and shoulder. During the whole period of my attendance, I never heard her cough, nor had she ever any expectoration; she always lay upon her back. The degree of ptosis varied, but no change occurred in the state of the pupil. The bleeding from the nose occurred almost daily. Enlargement of the liver was noticed towards the close of the disease, and though the left side of the chest had become enlarged, and the intercostal spaces were raised even above the level of the ribs, yet her extreme debility and the increase of her sufferings induced by a change of position, prevented my measuring the chest accurately.

After a succession of severe attacks of dyspnœa, she expired.

The treatment consisted of generous, bland diet, a moderate quantity of wine, and the use of camphor, æther, opium, lobelia, &c., sometimes given conjointly, at other times separately, according to the judgment of her father, a gentleman of great sagacity, who from close and unremitting attention to all the phases and variations in her case, acquired a rare tact in the employment of these drugs. The neuralgic pains which attacked the chest, shoulder, and sometimes extended down the arm were always relieved by a warm lotion containing tincture of aconite, in the proportion of one ounce of the common tincture to seven of water. Folds of lint saturated with the above lotion were laid over the painful parts, and evaporation prevented by surrounding the lint by a piece of oiled silk. This application used to give great relief.

Post Mortem Examination.—Before opening the body, a careful examination was made by inspection, percussion and measurement, when the following circumstances were noted. The whole of the front part of the chest was œdematous, and traversed by large tortuous veins which anastomosed freely with the superficial epigastric veins. The greater number of these vessels were noticed upon the left side. The left arm, from the shoulder down to the hand, was much swollen from œdema, and at its upper part were numerous veins inosculating with those of the neck, chest and axilla. The right infra-clavicular space was depressed, the left was full and prominent and constituted part of the tumour already spoken of. The right shoulder was elevated, and the clavicle was separated to about the distance of an inch at its attachment to the sternum. Percussion yielded the same results as were noticed during life, with this exception, that there was complete dulness extending from the normal hepatic region, downwards for the extent of two inches below the margin of the ribs. The circumference of the neck and tumour measured above the clavicle, was 16½ inches; the distance from the nipple

to the sternal end of the clavicle 6 inches on both sides. The circumference of the chest upon a line with the nipples was 27 inches; it being on the right side 12½, and upon the left 14½ inches; distance from the right nipple to umbilicus 9½ inches, from the left 10½. Nothing remarkable was observed on any other part of the body, except extreme emaciation. On opening the thorax, the heart and pericardium were observed lying to the right of the sternum, and distant about three inches from the mesial line. The pericardium was quite healthy and contained no fluid, nor was it adherent in any situation. The heart was of natural size, and free from any disease whatever, either of its walls or valves. The left side of the chest was occupied by an enormous mass of encephaloid cancer, which adhered firmly to the ribs and was continuous with the tumour noticed in the neck. It was contained within well-marked cysts, which enveloped it in the same manner as the arachnoid surrounds the brain, and which when slit open, allowed the cerebriform masses to be seen, presenting well marked convolutions and sulci exactly resembling those of the brain. In a few situations, hœmorrhagic clots intervened between the investing capsule and the surface of the mass. There was no adhesion to the front part of the ribs or to the sternum, diaphragm or pericardium. No trace of pulmonary structure could be seen, except at the diaphragmatic portion of the tumour, where a thin layer of condensed lung was spread over it for a small space, and peeled off it, as if merely coherent from apposition—no bronchial tubes extended from this portion of lung to the cancerous mass, nor could any be traced in the latter—the left bronchus entered its upper part, but no traces of its ramifications could be discovered. Such were the characters of that portion of the mass within the chest, but as it was emerging from the latter situation, it had dislocated the clavide and was indented by the latter bone. At this point, the tumour pressed upon, and stretched out the left subclavian artery and vein; the left carotid, though not so much interfered with, was pushed a little towards the mesial line. This artery as well as the pneumogastic and sympathetic nerves were pushed backwards by a process of the growth which proceeded towards the lateral processes of the cervical vertebræ, to which it took a strong attachment. On the anterior part of the tumour, the sterno-cleido mastoid, and the sterno-hyoid muscles were spread out in riband shape, and their fibres were separated from one another. The brachial plexus passed through the middle of the growth, and could not be completely separated from it, even by the scalpel. The third stage of the subclavian artery was obliterated by a coagulum, and was not much larger than the radial. The phrenic nerve passed over the most prominent part of the tumour. The œsophagus was pushed towards the middle and as noticed during life, the larynx trachea and thyroid gland were shoved over into close contact with the right brachial plexus. The mass adhered firmly to the clavicle near the shoulder joint, and also took an attachment to the acromion, and a portion of it passed under the trapezius muscle. When removed from the body, the mass was weighed, and found to amount *to six pounds and a half.* The right lung was quite sound, except at its inferior part, where we found three small encephaloid tumours, of the size of large currants, growing from the surface of the lung and covered by the pleura. The liver was much enlarged from

congestion, and when cut into, blood escaped in large quantity.

The other abdominal organs were all healthy. The brain was carefully examined. Some slight vascularity was noticed upon the pia mater, but there was no effusion either beneath the arachnoid nor in the cavity of the ventricles. The origin and course of the third nerve were accurately examined, but nothing abnormal could be detected, and the same remark applies to all the cerebral nerves and to the structure of the brain itself.

It is only within the last few years that the diagnosis of cancer of the lung has been established on a tolerably certain basis; yet cases are occurring almost daily, which prove that many points connected with the disease remain to be worked out yet, by the diligent in this field of observation. It is to be regretted, that the nature of some of those cases was not even suspected during life, that others were under the observation of practitioners imperfectly acquainted with the existing state of knowledge upon this and other thoracic diseases, whilst a third class of cases, has been carefully observed during life, but no post mortem examination having been performed, we are unable to connect their signs and symptoms with anatomical lesions observed after death. It is therefore, the duty of every one to add to the scanty list of accurately noted cases, any that may occur in his practice.

At the time the case of transposition of the Viscera was noticed at the Hospital, (the details of which, I laid before the profession in the April number of this Journal,) some of my pupils mentioned to me, that a young lady was then under the care of a physician of this city, in whom the heart was observed to pulsate on the right side, and they inquired, if it were not highly probable, that it was also an instance of congenital transposition. I replied, that I considered it much more probable that the patient laboured under chronic pleurisy of the left side, with displacement of the heart to the right. In a few days the case came under my own care, and I had no hesitation, at once, in declaring it to be an example of cancer of the lung, and for the following reasons, to all of which I drew the attention of my clinical class when lecturing upon this affection :—

1st. In nearly all the best observed instances of *primary* cancer of the lung, the disease has been ushered in by symptoms of pleurisy, and in many of them those symptons have existed throughout; in some cases undergoing abatement, as the cancer advanced; in others, disappearing, or remaining stationary. To the former class, belong the case under consideration, those by Graves*, Heyfelder†, Hughes‡, Syms‖, and Stokes§; and I doubt not, that if the early history of some other published cases had been inquired into, that the disease would have been found to have commenced with an inflammatory attack of the lung, or its investing membrane—at least, this has been the result of my experience of the disease, and in the above case, no exception was formed.

2. The only diseases producing enlargement of the side, absolute dulness, and firm resistance on percussion, absence of *vesicular* respiratory, murmur, protrusion of the intercostal spaces, and detrusion of the heart, are, extensive empyema, and cancer of the lung or

* Dublin Journal of Medical Sciences.
† Heyfelder, Archives Generales.
‡ Guy's Hospital Reports.
‖ Medico-chirurgical Transactions, vol. xviii.
§ Dublin Journal of Medical Sciences, vol. xxi.

mediastinum. In the foregoing particulars, these diseases resemble one another; but, I have only once noticed enlargement and tortuosity of the veins of the chest in empyema, and in only one case have I noticed a *bruit* in a heart dislocated from pleuritic effusion, and though I have observed tumours forming on the exterior of the chest in empyema, yet such tumours were always soft, fluctuating, and devoid of pain. Œdema of the side has been often noticed in acute pleurisy, less frequently in chronic, but in no instance of either form of the disease, have I observed it, accompanied by *permanent* œdema of the corresponding arm; and empyema, so extensive, as to have produced such a great change in the size of the chest, and, in the relation of organs, might have enabled peripheric fluctuation to have been detected.

3. The want of pulsation, bruit, thrill, dysphagia, of laryngeal cough, together with the extent of dulness, &c., were opposed to the idea of the disease being aneurismal, although the paralysed condition of the left arm, and loss of pulse at the wrist and bend of the elbow are not uncommonly observed in thoracic aneurism springing from the arch or some of its branches; and the same cause might produce a varicose condition of the veins of the thorax and arm,—a point to which my friend, Professor Walshe, of London, has directed attention.

4. With the idea of extensive deposition of tubercles in the lung and tubercular disease of the cervical glands, pathology and clinical observation are both opposed, for I do not believe, that tubercular disease of the lung ever produces enlargement of the affected side of the chest, or of any portion of it:* and in no case, no matter how extensive the deposit, have we complete dulness and total loss of respiratory vesicular murmur, and in extensive tubercular deposit, softening and consequently the signs of cavities, would have taken place long before I saw the patient—nor should we find, a healthy condition of the opposite lung, nor dislocation of the heart: and I need hardly add, that extensive tubercular deposition in one lung, would soon have been accompanied by signs of disease in the other, by cough, hœmoptysis, hectic, &c., and that external tumours, varicose veins, œdema, and paralysis of the upper extremities, are not seen in phthisis.

5. With the idea of the disease being chronic pneumonia (even granting its frequency, as some modern writers seem disposed to believe—an opinion to which my own experience is much opposed) the facts of the case were quite incompatible.

So that we find that with no other disease than cancer, could I reconcile the history, symptoms and physical signs of this case, and I shall now direct the reader's attention to some of its peculiarities.

Amongst the most prominent, may

* I am well aware, that on the authority of a verbal statement of Dr. Chambers, of London, that some writers—amongst others, Professor Walshe—have alluded to an elevation or bulging forward of the infra-clavicular region, as a sign of incipient phthisis; but as I have anxiously looked for this sign for several years, without in one single case observing it, I can only account for the discrepancy, by supposing, that in Dr. Chambers' cases, both sides were affected, and the atrophy being better marked on the side, where the least physical traces of incipient phthisis were observed, the opposite infra-clavicular region presented an appearance of *comparative* fulness or bulging, well calculated to deceive; for I have not unfrequently remarked [and had recently an opportunity of pointing out to my class at the Hospital] the fact, that in incipient phthisis, we may have marked atrophy of the infra and supra-clavicular spaces of one side, with comparative dulness and feebleness of respiratory murmur, whilst on the opposite, there may be no atrophy, scarcely any dulness, with a harsh respiration, gradually becoming accompanied by a "crumpling sound," dry crackling, and then (as in the case just alluded to) sibilant and muco-crepitating rales,—yet the condition of the opposite lung may remain as when first examined. It is only in this way, that I can account for the striking anomaly said to have been observed by Dr. Chambers.

be mentioned, the absence of cough, of bronchitic rales, of stridor, of dysphagia,* of currant-jelly-like expectoration, [for which, however, the daily epistaxis was a substitute;] of aphonia.

The paralysis and pain of the left arm are easily accounted for, by the pressure of the tumour on the brachial plexus of nerves; and by the same pressure acting upon the subclavian artery and vein, the absence of pulsation, and the presence of œdema are explained. It is worthy of remark that it must have been solely by mechanical pressure that the tumour produced paralysis, and not by involving the nerves in its own structure; for the larynx and thyroid gland being shoved over by it into close contact with the plexus of the right side, paralysis, to a less extent, was produced of the right arm.

Dr. Sims and others have noticed the œdema of the arm, resembling that of phlegmasia dolens: *but the total absence of pulsation in the principal arteries,*† *with complete paralysis of one arm and partial paralysis of the other*, are now recorded for the first time, and though pain of the chest and through the shoulder is often mentioned, yet I know of no other instance where it extended down the whole arm. I may here observe, that pain of a *constant* nature spoken of by Dr. Stokes as a valuable diagnostic, was not present in this case; for when once relieved by the aconite lotion, it did not often return, and even before my attendance it was not constant, nor, indeed, of late, was it frequent.

Dysphagia appeared only in the last two days of her illness.

As might be expected, some cause for the *ptosis* and *contraction* of the pupil was carefully looked for in the brain and third nerve, but without success: no trace of disease could be disovered. How, then, are we to account for these symptoms? We know that ptosis is usually accompanied by a *dilated* state of the pupil, and by paralysis of the superior, internal, and inferior recti muscles, and also of the inferior oblique; but, as was stated before, there was no paralysis of any of these muscles, and the pupil, though constantly contracted, became smaller and larger, according as the intensity of the light was increased or diminished. Nor can we suppose that the superior branch of the nerve was alone affected, for we know that that portion sends no twigs to the lenticular ganglion. If we appeal to experimental physiology, we do not receive a more satisfactory solution of the *entire* question; but for *part* of it we can account. It was ascertained by Longet, that division of the pneumogastric and sympathetic nerves, in the neck of some animals, was followed by *contraction* of the pupil, whilst in others it was followed by *dilation*. Now, if the same cause produce effects so opposite, on such a delicate organ as the iris, it merely proves that the division of these nerves acts, in disturbing the innervation of the organ, in one case producing a diminution of power of the circular, in the other, of the straight fibres of the iris; and if we admit this explanation to be correct, we can understand how, in an analogous experiment, the nervous

* The earliest case recorded of cancer of the lung, attended by dysphagia, is that, I believe, given by Van Sweiten. He says, "for this last observation I am indebted to the learned Dr. *Anthony de Haen*, who exerts himself in the practice of physic with great applause at the Hague, and with indefatigable industry takes every occasion to enquire into the latent causes of diseases in dead bodies, and who opened this patient after his decease, before the celebrated Schwencke, professor of anatomy and surgery."

† Dr. Walshe says "I have recently found the radial pulse very triflingly weaker and smaller on the affected (right) than on the other side; but in this case a mediasterial tumour co-existed with the disease, affecting the root of the lung; the difference has been observed independently of the former, and is, under all circumstances, rare.—*Treatise on Cancer*, *p.* 352.

power of the other branches of the third being diminished, (for it is evidently owing to the connexion of this nerve, and of the fifth, with the sympathetic, that the phenomena are produced;) some of the muscles supplied by that nerve may be actually in a *slightly* paralytic condition, which may escape the observation of the patient, and of his physician, unless a strong antagonising muscle be in action, as in the case of the orbicularis palpebræ in the foregoing case, and then the diminished power of the levator palpabræ becomes at once apparent. I make use of the term *analogous experiment* advisedly; for it must be evident, that *pressure* on the pneumogastric and sympathetic nerves produced the same effect, for the time being, as division would have done: so that, in this instance, disease imitated the experiment of the physiologist, and went far to corroborate it. This view is borne out by what was frequently observed, that on those occasions when the tumour of the neck became enlarged and the venous system more congested, the ptosis was always more marked. Should the foregoing explanation not prove satisfactory to any of my readers, they are at liberty to account for the phenomena of *contracted pupil with ptosis, and without paralysis of the muscles of the eye*, the brain being healthy, upon any other hypothesis they may consider more convincing: I have offered the best that has suggested itself to me.*

To auscultators the occurrence of marked bronchial respiration, with bronchophony, heard all over the left side, whilst there were no bronchial tubes running through the cancerous mass, suggests many questions of consideration:—Where were those sounds generated? how were they transmitted all over the side?—if by continuity of the ribs with those of the opposite side, through the medium of the sternum, or by continuity of the ribs with the larynx and trachea, partly through their connection with the sternum and with the cervical tumour,—or did the mass itself act as a conductor from the larynx and trachea to all parts to which it extended? The latter opinion I am disposed to adopt. If the ribs are supposed capable of having transmitted those sounds, then they should have also transmitted the cardiac sounds, and the vesicular murmur from the opposite side, and the sound heard all over the diseased side would have lost much of its strongly marked tubular character; and for the same reason I cannot suppose that the parietes acted as conductors from the trachæ—seeing that they do not perform this office in other cases. There is no difficulty, however, in comprehending how a mass of encephaloid occupying the left side of the chest, and firmly pressed against the larynx, no breach of continuity occurring in its structure, and into whose substance the left bronchus entered for some distance, should convey, with great clearness, sounds generated in the larynx of an individual, in whom exaggerated respiration had become habitual and permanent.*

The peculiar bruit heard to accompany the sounds of the head remains unexplained by any anatomical appearances discovered at the autopsy.

* The iris receives a branch from the sixth nerve in several animals, and it has been supposed that it sometimes does so in man, which would account for the fact that the pupil has *not* been affected in some cases where *all* the other muscles of the eye were paralysed from disease of the third nerve: in the above case, the singularity consists in our having only one muscle supplied by the third nerve, and only one set of fibres of the iris in a state of semi-paralysis.

* I purposely avoided entering into any discussion on the views of Professor Skoda, of Vienna, whose skill as an auscultator I had an opportunity of witnessing, whilst following his *clinique*, as they may form the subject of another communication to this Journal.

In conclusion, I would remark that this is the largest specimen of cancer of the lung on record. In Dr. Graves' case, the diseased mass is said to have weighed more than six pounds, but the patient was a male adult. In the above instance, the mass removed weighed six pounds and a half—some ounces more having been left behind—and the patient was a young girl of low stature and delicate formation.

ART. X. — *Observations upon the Diagnosis of Cardiac Disease, founded upon a case of Mitral Disease with regurgitation through the Left and Right Auriculo-Ventricular Orifices, associated with general Dilatation and Hypertrophy of the Heart, by* R. PALMER HOWARD, M.D., *Licentiate Royal College Surgeons, Edinb., Associate Member of the Surgical Society of Ireland, &c.*

[CONCLUDED FROM OUR LAST.]

Autopsy 30 *hours after death*, assisted by my friend Dr. Wright. Cold weather. External appearances; no rigor mortis; abdomen and thorax much distended, especially the former. Cadaveric lividity generally diffused over depending parts of body and members; this condition present in both iliac fossæ along the course of the epigastric veins, but particularly along those of the left side, which also present a flaccid and shrivelled appearance. These linear marks, very numerous and of a bright red colour in left lumbar region, exhibit in an exaggerated degree the appearances observed on the extremities in phlebitis, and under suspicious circumstances would favour the idea of violence having been used. *Thorax*—Right lung did not collapse; it was universally crepitant, and somewhat emphysematous (vesicular form); no marks of extravasated blood on its exterior; sanguinolent serum exuded from its substance when cut; structure healthy. No adhesion of pleura. Left pleura contained about oij of deep straw coloured serum. Left lung lay at back of thorax, close to the spine and ribs; it was universally of a deep purple colour, except a small portion of the summit of the upper lobe, which was somewhat congested, but crepitant, and from which, when cut, exuded bloody serum; the rest of the organ more resembled hepatic substance than pulmonary, and afforded an excellent example of carnification; its structure was of a deep reddish-black hue, non-crepitant, firm, not fragile; no serosity could be squeezed from it; its sole contents were blood. No adhesions of the pluera.

The distended pericardium extended nearly to the 2nd rib and concealed the left lung; it contained at least one pint of fluid like the above; a small film of lemon-coloured fibriu floated in it. No adhesions or thickening of this serous sac. A white spot, about the size of a fourpenny-bit, on right ventricle. The heart quite flaccid; looks three times as large as natural, and is an example of what has been called "*hypertrophy by increased extent*"; it weighs oz xii. The left ventricle will receive a goose egg; its walls measure about 2 lines at the apex, $\frac{5}{8}$ inch at the middle, and $\frac{3}{8}$ of an inch at the base. Left auricle somewhat dilated; its walls of natural thickness. Left auriclo-ventricular orifice measures $3\frac{1}{8}$ inches in circumference; the larger valve next the aortic opening is so thickened and stiffened that it does not close accurately; the other is also ossified at its base. At the posterior point of union and insertion of these two valves (mitral) into the fibrous ring there is a calcareous concretion 3 lines thick, and from this 3 round irregular branches or roots of the same material extend, 2 of them

into the ventricle and the other into the auricle. Calcareous particles stud the fibrous ring nearly all round. Right ventricle about the same size as left; its walls measure about a line at the apex, and 2-8ths of an inch at the middle and base; its columnæ carneæ are well developed. Right auricle dilated, its columnæ carneæ are also very well developed. Right auriculo-ventricular orifice measures 5 inches in circumference; the tricuspid valves are sound and very large, and might close the cavity if not much distended; aortic and pulmony valves quite healthy, and accurately close the openings over which they preside. The great vessels of heart and lungs contain masses of soft black coagulated blood.

Abdomen—Large quantity of fluid in the peritoneum, similar to that in the pluera; no traces of inflammation. Liver large and greatly congested; its cut surface is mottled like a nutmeg; blood oozes freely from it. Gall bladder nearly filled with fluid bile; no gall stones. Spleen small, hard, and resisting—of same colour and consistence as the carnified lung, but its substance is darker and more fragile. Kidneys congested, flabby, and tolerably large. Stomach exhibited large veins gorged with blood, which are especially numerous at its greater extremity; the mucus coat is much thickened and congested; this condition is so marked at the pylorus that it communicates a dark green colour to the membrane, which is easily dissected off the muscular coat; the same appearance, to a less degree, exists about the cardiac orifice: the mucous membrane is not softened. The viscus contained no blood. The veins of great omentum and mesentery gorged. Intestines natural.

Head not examined.

Observations.—This case has an important bearing on the diagnosis of mitral valve disease, respecting which a difference of opinion exists amongst medical men. Many authorities—as Drs. Hope, Latham, Bellingham, Littré, Furnival, Blakiston, &c.—state the signs of mitral regurgitation to be, a murmur of various character with the first sound, most audible at the apex of the heart and the lower angle of the left scapula, and not propagated up the aorta; purring tremor; pulmonary obstruction; small, weak, unequal, irregular and intermittent pulse. In opposition to these, we find Dr. Ranking concluding "that a patulous mitral valve does not give rise to a 'bruit,' but 'that the sound heard in such cases is due to co-existing disease of the aortic orifice. Dr. Barlow, in the Guy's Hospital Reports for 1845, expresses the same opinion, although he assigns the production of the murmur in such cases to distension of the right ventricle. Now in H. S——'s case all the above-cited signs were well marked, yet the aortic valves were perfectly healthy, while the mitral alone were diseased. And if the latter gentlemen will refer to Dr. Blakiston's practical work on "Diseases of the Chest," they will find that in the only four cases (C32, 35, 56 and 74) out of 37, in which the mitral were the only valves diseased, a "bruit" was audible at the left nipple in three of them (C 35, 56 and 74), and in addition at the lower angle of the left scalpula in two of them (C35 and 74), and that its absence in the fourth (C32) was attributable to the flabby and enlarged state of the heart, and its consequent inability to propel the blood with sufficient velocity to produce a murmur; this explanation is favoured by the circumstance that although in this

* Half-yearly Abstract of the Med. Sciences, Vol. I. p. 212. Amer. Ed.

patient there was great disproportion between the size of the heart and that of the aorta, yet no abnormal sound was caused thereby. I might cite examples from Hope, Taylor, Furnival, and others, in further corroboration of the affirmative side of the question: but enough.

With reference to Dr. Barlow's explanation of the systolic murmur heard in these cases, I would remark that it is quite improbable that a loud rough murmur can be produced by the co-existence of simple dilatation of the right ventricle, and that even when tricuspid regurgitation accompanies the latter condition a murmur is very seldom heard, as will be shewn below; further, it is unfair and illogical to attribute the "bruit" to such a cause, when mitral disease is present and rationally accounts for the murmur, as well as for its character and situation.

Another interesting particular in this case was the tricuspid regurgitation. To Dr. Blakiston we are indebted for pointing out the existence of this condition in *almost every case* of obstruction of the vessels of the general circulation originating at the heart; his is the merit of having shown the true cause of this obstruction to be regurgitation through the tricuspid orifice, and not, as supposed by Dr. Hope, to be dilatation, "which by putting the muscular fibres of the heart preternaturally on the stretch, their contractile power is diminished, so that they lose as it were in force what they gain in length; and it is this deficiency of power," he says, "in the mainspring of the circulation, which constitutes the obstacle, if it may be so called, to the circulation."* Audral was also in error when he stated that the impediment to the circulation arose "from the excess of the capacity of the heart relative to that which has been preserved in the blood-vessels." In proof of his position Dr. B. gives a table of 155 cases of heart disease.* Of 116 of these in which the general circulation was obstructed, tricuspid regurgitation existed in 106; and of 39 cases without obstruction of the general circulation, only 5 presented this condition, and of these 3 had in addition an open foramen ovale, so that the stream was divided between the venous and arterial circulations. Further, Hope's hypothesis will not explain the frequent co-existence of hypertrophied and dilated right ventricle with an obstructed circulation; whereas Dr. B.'s does. And in reply to Andral's theory, it will be mentioned below that in 12 cases of dilated right ventricle, of long standing, no symptoms of obstructed circulation occurred.

The signs of tricuspid disease are admitted by most authors to be not all certain. However, Dr. Blakiston thus states those of regurgitation through the right auriculo-ventricular orifice: "Seldom any murmur. Venous pulsations of the neck. Obstruction of the general circulation."† To which may be added, when a murmur is present, it is best heard under the sternum, in a line with the point at which the mitral murmur is audible; it is not as rough or grating as the latter, and Dr. Hope has never known "purring tremor" to accompany it.

It is difficult to tell by the physical signs whether the regurgitation depends upon mere temporary distension of the right cavities, or upon incapacity of their valves from disease or permanent dilatation of the ventricle. From the table already quoted, we learn that in 123 cases of dilated right ventricle tri-

* Hope on Dis. of the Heart, p. 283. 5th Ed. 1849.

* Blakiston on Dis. of the Chest. p. 197. 1848.
† Loco citato, p. 227.

cuspid regurgitation occurred in 111 of them: in the remaining 12 cases the valves were so large that they prevented regurgitation. The incompetency of the valves arose from dilatation alone in 60 cases, from disease alone in 6, and from both in 45. Hence, contrary to what might have been expected, we can not, in a given case of tricuspid regurgitation, say "a priori" it is most likely due to dilatation merely, for actual disease was present in 51 out of the 111 cases—nearly one-half of the whole.

1st, then, how shall we know if the tricuspid regurgitation depends upon temporary distension or upon permanent dilatation of the right heart? This can not be determined by a single examination; but here the important principles in diagnosis so insisted upon by my talented teacher, Dr. Stokes, viz.—time and extended observation—render much assistance. The brief duration of the symptoms, and their yielding to and disappearing under the use of appropriate treatment, will show that they depended upon the former, while the contrary will be indicative of the latter. Further, the clinical history of the case will help us; for if the patient has not had previous disease of the heart, arteries or lungs, and if the symptoms arise in the course of or subsequent to typhus, scorbutus, purpura, anœmia (from whatever cause), or general emaciation, the regurgitation is likely due to temporary dilatation from softening or attenuation of the muscular fibres of the heart, and is amenable to tonic and roborant measures. Again, if it succeeds the former diseases while they are yet recent or not excessive, it may still be owing to mere temporary distension, and yield to treatment; but this latter condition is now very likely to end in permanent dilatation, if the cause can not be removed. This was illustrated in H. S.'s case; there was incurable mitral disease, and the tricuspid regurgitation arising from over distension of the right cavities, although at first yielding to suitable treatment, soon returned, and, continuing to the last, expedited very much the fatal issue.

The diagnosis between tricuspid regurgitation depending upon permanent dilatation of the right auriculo-ventricular orifice, and that arising from structural changes of the tricuspid valves, is yet more difficult and uncertain than the preceding; but here also the previous history will be of use. However, it is of little consequence as respects the prognosis whether valvular incompetency be owing to permanent dilatation of the orifice or to pathological conditions of its valves, since permanency is the characteristic of both. The treatment will be influenced by other circumstances, such as the increase or deficiency of contractile power in the heart, the presence or absence of pulmonary disease, &c.

There are some interesting points connected with the physical signs of pericardial effusion in this case. The dulness over the heart gradually increased, so that on the 5th Oct. it extended "from the inferior border of the 2nd rib to the lower part of the epigastric region, and from a point 2 inches on the outside of left nipple to one an inch on the right of sternum," the patient lying on his back during the examination. This sign in connection with vibration of the intercostal spaces favoured the idea of considerable effusion into the pericardium, but the strength of the impulse and the distinctness of the sounds were unfavourable to this view, so that I was undecided whether to explain the phenomena by supposing the existence of hydro-pericardium, or of great dilatation of all the cavities of the heart, with-

out attenuation of their parietes; the latter supposition indeed best accounted for the physical signs present; for, besides the well-known signs of dilatation with hypertrophy, viz., increased dulness, loudness and shortness of the sounds, strong impulse, &c., Dr. Blakiston has shown that even feeble pulsations may be produced between the 2nd and 3rd left ribs by a dilated appendix auriculæ, and the orthopnœa, anxiety, feeble pulse, &c., are not pathognomonic of either condition.

Dr. Hope says that he never saw, in cases of general dropsy, the fluid in the pericardium amount to a pint, and yet the quantity present in the above case was estimated by three of us at a pint and a-half, although I have stated it at a pint so as to be rather under than over the truth.

As regards the treatment, it was conducted upon the principle of relieving the congestion of the lungs by occasional small local depletions, by keeping up a serous discharge from the surface by means of blisters, and by free bronchial secretion. Tonics, and especially iron, were given to support the system generally, and prevent the increase of dilatation; while diuretics, diaphoretics, and occasionally hydragogue cathartics were administered in their turn, according as it was thought desirable to promote the renal, cutaneous, or intestinal secretions respectively.

An interesting circumstance in the case, which may properly be alluded to in this connection, is the very abundant discharge of urine which took place shortly after the performance of acupuncture. How may it be accounted for? The only explanation which suggests itself to me is the following: the removal of so large a quantity of fluid by puncture must have diminished the obstruction produced in the venous radicles by the mere mechanical influence of the effused serum, and as a consequence of this removal the general circulation became more active, the venous engorgement decreased, and consequently absorption commenced with vigour, and nature as usual relieved herself through one of the emunctories, the kidneys.

If we reflect upon the state of the lungs only in the above case it will seem no wonder that an unfavourable issue was the result. The left, with the exception of its apex, carnified; the right encroached upon by extensive effusion into the pericardium and left pleura, its vessels kept engorged by mitral regurgitation, its expansion prevented by the ascites pressing against the diaphragm, the supply of air being diminished by copious sero-sanguineous effusion into the bronchial tubes, and the oxygenation of the blood impaired by co-existent thickening of the lining of the pulmonary vessels and tubes. When to this is added poisoning of the blood by accumulation of the elements of the bile, proved by the absence of this secretion in the evacuations, and the yellow tinge of the conjunctivæ, exudation of the serous portion of the vital fluid which is tantamount to depletion, and debility resulting from the latter and from impaired assimilation, we shall at once perceive the utter hopelessness of the case.

St. James Street,
Montreal, 6th April, 1850.

ART. XI.—*On some of the Mineral Associates of the Gold of California, by* T. S. Hunt, *Chemist and Mineralogist to the Geological Survey.*

An opportunity has lately been afforded me of examining a portion of the sand from the auriferous gravel deposits of California; through the politeness of

our countrymen, Mr. Z. Rochon, who has recently returned from that country, and has brought with him many specimens illustrative of the wealth of that interesting region. He having generously presented a suite of specimens to the Natural History Society of this city, I was enabled carefully to examine them.

Our accounts hitherto had described the gold as associated with platinum and what was supposed to be magnetic iron; the existence of diamonds has also been announced. The specimen which I examined was the result of washing the crude gravel, and consisted principally of a fine heavy black sand, in which were seen a great number of small scales of gold. By the careful use of a magnet it was separated into two portions; the one, which constitutes about three-fourths of the whole, is magnetic iron ore; the remaining fourth is a mixture of black brilliant grains, with a grayish sand and scales of gold. Many of the black grains present octohedral faces to the naked eye, and under the microscope are seen to consist of regular octohedrons with pitted surfaces; others of them are rounded grains. Among the sand were observed numerous small crystals, transparent and of a light yellowish brown, which had the form of square prisms, sometimes regularly terminated by pyramids or having the terminal edges replaced. By these characters, and by their great hardness, they were recognized as *zircon*. A few crystals were observed in the form of hexagonal prisms, terminated by pyramids, having the angles and general appearance of *quartz*; but the larger portion of the non-metallic sand was made up of amorphous semi-transparent grains, some of them were colorless or yellowish, while others were observed of a violet blue and of a reddish or hyacinth brown. The lighter ones were probably quartz, with perhaps some fragments of zircon; but, from their minuteness and want of crystalline form, it was very difficult to say to what species the blue and red grains are referable.

The octohedral form of the black crystals led to the suggestion that they might be chromic iron, and I therefore submitted them to a chemical examination. Having finely pulverized about a gramme of the sand from which the magnetic iron had been removed, I mixed one-half of the powder with carbonate of soda and nitre, and heated the mixture for some minutes to fusion. On cooling and digesting the mass with water, a yellow solution was obtained, in which the presence of a considerable amount of *chromate of potash* was recognized by the ordinary tests.

The other portion of the powder was decomposed by digesting with hydrochloric acid, adding sulphuric acid towards the end of the process. On evaporating until the fumes of sulphuric acid were disengaged, cooling and dissolving the residue in a large quantity of water, a solution was obtained which by long boiling threw down an abundant white precipitate. This was redissolved by hot concentrated sulphuric acid, by which character and by the subsequent tests of tincture of galls, and the reducing action of zinc and hydrochloric acid, it was clearly shown to be *titanic acid;* thus confirming my suspicion that the amorphous black grains associated with the chromic iron were *titaniferous iron* or *ilmenite*.

The result of this examination shows that to the platinum, diamond and magnetic iron, hitherto recognized as occurring with the gold of California, we are to add chromic iron, ilmenite and zircon. This observation is peculiarly interesting, as establishing a complete parallel-

ism between California and the other auriferous regions of the globe. In the mines of Brazil the minerals accompanying the gold, platinum, and diamonds, are magnetic iron, chromic iron, ilmenite, and zircon; and in the rich gold region of the western flank of the Urals the same minerals occur; in both of these localities rutile is met with, which is another form of titanium. The gold bearing region of the United States has lately yielded specimens of platinum and several diamonds, together with magnetic iron, zircon, rutile, and brookite, a crystallized mineral chemically identical with rutile.

These facts assume a new interest when we look at the gold region of Canada, in the valley of the Chaudière. Here, through a considerable extent of gravel, gold has been met with; and associated with it are found magnetic iron, chromic iron, ilmenite, and rutile. From our examinations in the Seigniory of St. François, in the vicinity of the gold region, it becomes evident that the source of the chromic iron and ilmenite is found in the adjacent serpentine, in which the former is disseminated in grains, while the latter, mechanically mixed with magnetic iron, forms a vein in the same rocks.

These facts fully establish the similarity between the gold region of the Chaudière and those of Brazil, Russia, and California; and we may confidently expect that an extended exploration of the district will disclose the presence of both platinum and diamonds. But whether the discovery of these or of more extended deposits of gold is to be considered as advantageous to the country, is a question scarcely to be decided but by experience.

Montreal, May 15th, 1850.

See the description of the Gold region of the Chaudière in the Report of the Provincial Geologist, Mr. Logan's, for 1847-48, from p. 78. to p. 80.

ART. XII.—*Horses and their Diseases: Lamenesses—Curb.* By J. B. Turner.

The word "Curb," as used by the English, most probably came to them from the Normans, in company with all the other terms of the manège; the French word being *courbe*, evidently derived from the Latin *curvare*, to curve or bend, and certainly suggested by the form of this very troublesome swelling.

Percivall, of the Life Guards, the most elegant, accurate and able of modern veterinary writers, thus describes Curb:—

"A Curb may be defined to be, a prominence upon the back of the hind leg, a little below the hock, of a *curvilinear* shape, running in a direct line downwards, and consisting in effusion into or thickening of the sheath of the flexor tendons." (Just after they pass over the hock.)

The swelling is sometimes so slight, and rises so gradually from the surrounding parts, that it cannot readily be seen when the surgeon stands behind the horse; he should therefore move to the animal's side, when the unnatural prominence of the part immediately becomes visible, rising gradually from the surface at about three inches from the point of the hock, and extending downwards for from three to four inches, and as gradually vanishing in the surface of the skin.

The swelling is tender and hot to the touch, the heat often extending to some distance on the surrounding skin: there is evidently considerable pain, for the animal eases itself by bending the leg and throwing its weight on the toe.

In young horses the swelling is hardly ever of any great size, is difficult of detection, and is thought nothing of unless it is accompanied by what are called "curby-formed hocks," or otherwise "sickle hocks"—by which we

understand a leg so formed as to incline too much forwards, under the body of the animal, thereby making too great an angle between the thigh and leg, and consequently weak and liable to give out. Now, as the hind quarters are the chief instruments of progression, horses whose legs deviate in this way from the straight line drawn from the point of the hock downwards to the ground, are especially unfit for hard galloping or leaping, or any work in which the hind quarters are principally brought into action.

Some singular opinions as to the cause of this tumor making its appearance are to be found in our earlier veterinary works. The oldest work I have is that of the Sieur de Solleysel, "Equerry to the King of France for his great horses," written about the year 1690. Solleysel, as translated by Sir William Hope, says, "The Curb is a large and hard tumour, generated by flegmatic matter seated on the *inside* of the hough, higher than spavin, on the substance of the tendon that strengthens the part; 'tis a long swelling in the shape of a pear, cleft through the middle into two pieces, higher above than below, and sometimes makes the horse halt." With the exception of the error in the situation assigned, "*inside* of the hough," the definition is not so far from correct; it is possible that the word "*inside*" may be a mistranslation, though Hurtrel d'Arboval, a modern French Veterinarian, makes the same mistake in his celebrated Dictionary.

Osmer, an old English author, of great repute in his day, describes the tumor as "a swelling on the joint of the hinder leg, below the hock," but he gives no opinion as to its cause.

Bracken, another English author, who lived about the middle of the last century, a physician as well as veterinary surgeon, thought that Curb was an effort of nature to strengthen the parts in horses with "sickle houghs"!

Among the moderns, Blain, a great authority, says that Curb is "an extension of the ligaments of the hock, or of the sheaths of the tendons passing from the hock downwards, as of the flexor perforans."

White, a military veterinarian, conceived Curb to be occasioned by the "rupture and consequent inflammation of some vascular membranes situated between the two tendons of the gastrocnemu"—in fact a sprain.

Spooner, who has put out a new edition of White, with some remarks of his own, observes that "Curb depends upon a strain and inflammation of the strong ligament that passes from the os calcis down the back of the hock to the shank bone, frequently involving the flexor at the same time."

Professor Dick, of the Edinburgh College, gives the same description with Percivall of the appearance of the tumor, and says "that the complaint is produced by an injury of the ligament which connects the os calcis with the metatarsal bone, and consists of a thickening of the ligament and cellular membrane."

Youatt attributes Curb "either to a strain in the ring-like ligament which binds the tendons down in their place, or in the sheath of the tendons"—oftener, he thinks, in the ligament than in the sheath.

W. C. Spooner, in his recent notes to Youatt's beautiful work, seems inclined to lay the seat of the disease in the sheath of the flexor tendon, and says that it in fact resembles sprain of the back sinew, as it is commonly called.

Here is certainly sufficient uncertainty of opinion, but it is not to be

wondered at when we consider how few opportunities there are of autopsy in cases of curb. The disease is a mild one, comparatively speaking; that is, it occasions pain and lameness while it lasts, but horses don't die of it: hence we have few or no opportunities for dissection and examination.

Let us now look at the anatomy of the parts. The tendon of the *gastrocnemius internus** expands upon the point of the hock, and forms a sort of cap for it; it then proceeds down the back of the leg, enveloped by cellular tissue, and is by it connected with the surrounding parts. Directly in front of the tendon is a serous *bursa*, and behind it is a tendinous band, denominated the annular ligament, binding the tendon down, and adding generally to its effect. Now the seat of curb is directly opposite to this serous bursa, or thecal cavity, through which passes the *perforating* tendon; and there can be very little question but that the tumor is caused by the great play which the tendons have at this point; sprain and laceration taking place *not in the tendon or ligament*, but in the cellular sheath of the tendons, the physiological history of the accident being that from some sudden exertion or false step, while going at a fast pace, the horse has been compelled to place the *gastrocnemii* muscles, from which these tendons—the *perforated* and *perforating*—proceed, into instantaneous and violent action, resulting in extension, if not in laceration, of the cellular sheath. I believe Percivall's opinion is identical with this account, though I have not his work at hand to refer to.

When the appearance of the tumor immediately follows the accident, it can be readily supposed that there is rupture of some small blood vessels, and consequent extravasation; but more commonly some time elapses before the appearance of the swelling, by which we conclude that internal serolymphy effusion is going on, probably pervading both the cellular sheath and the bursa, and this gradual deposition is most likely the reason why lameness does not appear in all cases at first; in many cases, in which the injury is slight, though there may be a well defined swelling, there is no lameness at all.

If a horse be brought to a veterinary surgeon while the tumor is in this, its first stage, while there is heat, tenderness, and lameness, it is easy enough to deal with it; but, unfortunately, they are not generally applied to until the interstitial deposit has become hard and callous, the cellular sheath being permanently thickened and indurated. A curb in this condition in fact consists in hypertrophy of the sheath of the flexor tendons. Cases have been met with in which curb has assumed a malignant form, finally involving the substance of the tendons themselves.

The Treatment.—The horse should be kept as free from motion as possible, not even being allowed the liberty of a loose box, and the tendons should be relaxed by the application of a high-heeled shoe. The diseased part should then be well fomented with hot water—not in the way in which grooms usually apply fomentations, for a quarter of an hour at a time, and perhaps twice a day—but continuously and thoroughly, for at least an hour at a time and four or five times in the twenty-four hours, a large body of hot water being kept to the part by means of thick flannels, several times folded. A strong dose of purgative medicine should be given;

* The myological nomenclature of Percival. This tendon is commonly called the "perforated."

the croton farina* would in this case probably answer better than aloes, as the horse must not be walked about to assist the operation of the medicine. If the case is a very bad one blood may be taken from the toe; but the fomentation, physic, high-heeled shoe, and perfect rest will generally restore soundness, if the surgeon has been called in soon after the occurrence of the injury.

I will not say anything about the various cooling and discutient lotions that have been recommended in the treatment of curb, for all these require the use of bandages which are difficult to retain on the part, and we have other more effectual means.

If the treatment detailed above does not succeed, we must resort to more powerful remedies, and I will at once mention that which appears to be most successful among the modern veterinarians, and was first adopted by Mr. Wills—I mean the deuto-ioduret of mercury. This I have tried with marked success in some recent cases.

After the heat and tenderness have been subdued by fomentation,—when in fact I believe that there is no longer any acute inflammation, but that it has become of a chronic character,—I shave off all the hair from the tumor itself and for about an inch around it. I then paint the part so denuded of hair with vinegar of cantharides, tying up the horse's head at night; in the morning wipe off the discharge with a soft sponge and warm water, and foment for half an hour, renewing the application of the cantharides and fomentation every day for three days. I then apply daily, or twice a day, the deuto-ioduret of mercury, two drachms to an ounce of hog's lard, having it well rubbed in, and then smearing a little over the surface, and this I continue until the curb has disappeared and soundness is restored. It is advisable to tie up the horse's head for an hour or two after the application of the ointment. Mr. Wills stated that he removed by this treatment two obstinate and indurated tumors in six weeks; but in the few cases I have had, which were mild ones, the disease yielded in as many days.

If, however, this treatment fails, or if curb continually recurs, which it often does, there is nothing for us but the firing iron; though I should never, except in a very extraordinary case, where the curb is of unusual size, and the lameness excessive, recommend this painful remedy in the first instance. Whatever be the remedy applied, it is advisable to let the horse wear the high-heeled shoe for some time after the cure, and indeed it would be well to keep the animal for some weeks in a state of repose, or at least in very slow and moderate work, for a hock once curbed will hardly ever again stand much exertion.

* Dose.—From a scruple to half a drachm, made into a ball with palm oil, linseed meal and pulverised ginger; operating in from six to eight hours.

ART. XIII.—*Preliminary Report on the Observations of the Aurora Borealis, made by the N. C. Officers of the Royal Artillery, at the various Guard-rooms in Canada, by* CAPTAIN LEFROY, R.A., F.R.S., *H. M. Magnetical Observatory, Toronto.*

The system of Observations on the Aurora Borealis, permitted by Colonel Dynely, C. B., at my request, to be made at all our Regimental Guard-rooms, under the sanction of the officers in command, has now been continued for two years in Canada, and for one year in Nova Scotia and Newfoundland. I have therefore pleasure in communicating a short account of what has been done, for the sake of the encouragement which the results afford for persevering in the undertaking.

The printed instructions dated 11th October, 1848, expressed in a few words the objects in view in keeping these registers. They were—(1.) To ensure the observation of every Aurora which should be visible in Canada, so as to afford a better criterion of the actual frequency of the phenomenon than can be given by observations at any one station. (2.) To supply the means of judging how far variations of the magnetical elements, shown by the instruments at Toronto, during cloudy weather, might be connected with Aurora visible elsewhere. (3.) To furnish data for computing the height or distance of the luminous region from the earth. (4.) Lastly, to throw some light on the question whether or no the same Aurora is not sometimes seen under considerably different forms by observers stationed not very far asunder.

It is not worth while to enter into some of these enquiries until all the materials for comparison are accessible, including the observations made in the United States under the instructions of the Smithsonian Institution, and those published in the Regent's Reports. I shall confine myself therefore at present principally to the first of them.

In the year 1848, Aurora, or Auroral Light, was observed at Toronto on 69 nights, although for the last six months of the year no observation was made after midnight. This number is exclusive of 5 observations of a luminous appearance in the clouds, referred to Aurora, but not perfectly determined. Observations are to be found at other of our stations on many of the same, and on 57 other nights, exclusive of 1 doubtful one: making a total of 126 decided, and 6 doubtful appearances in Canada.*

* Including Newfoundland for November and part of December.

There are about 46 nights in the year in which it was clouded at all the stations; if we omit these, the proportion is 10 observations to every 26 nights on which observation is not wholly precluded by the state of the sky—or 39 per cent.

This proportion is greater than that given by one station taken singly. We have—

At Quebec, in 1848, 52 observations to 188 practicable nights—28 per cent.
At Montreal, 41 observations to 201 practicable nights—20 per cent.
At Kingston, 64 observations to 218 practicable nights—29 per cent.
At Toronto, 69 observations to 207 practicable nights—33 per cent.
At London, C. W, 33 observations to 178 practicable nights—19 per cent.

It is, however, probably less than the truth, as far as it expresses the actual frequency of the phenomenon, as I have considered observation to have been possible whenever nothing to the contrary is stated, which is, most likely, more than the facts would warrant; moreover, when we consider the short duration of some of the displays, and how close to the horizon others of them occur, it is difficult to believe that we have noted every one, even on nights when the sky was clear; it is probably set down as clear in many instances when it was sufficiently clouded near the northern horizon to prevent a feeble display from appearing. The dates included in the list at which it was seen at all the stations, which extend along a line of 500 miles, are Jan. 11, 16; Feb. 21, 23, 24; March 16, 24; April 1, 2, 5, 6, 7, 29; Aug. 21; Nov. 16. On several other occasions it was seen at every station at which the state of the sky permitted it; but there are one or two instances of clear sky at stations not

recording Aurora which was seen elsewhere.

Aurora, or Auroral Light, was observed at Toronto in 1849, on 63 nights, exclusive of 5 entries of an uncertain character—the observations terminating at midnight throughout the year. The other stations, including Newfoundland and Halifax, add 70 more, exclusive of 2 doubtful ones: making a total of 133 certain, and 6 uncertain appearances, in Canada, Nova Scotia, and Newfoundland.* The area included this year, measured from London, C.W., to Newfoundland, extends about 1150 miles from east to west; and measured from Quebec to Halifax, about 140 miles from north to south. Owing to this great extent, there are but few nights (24) clouded at all the stations, and omitting these, the proportion is 39 per cent., or exactly the same as before. We have at—

Newfoundland, in 13 months, or from 26th Nov., 1848, to 3st Dec., 1849, 59 observations to 178 practicable nights, or 33 per cent.

Halifax, in 10 months, or from 14th Jan. to 31st Oct., 1849, 30 observ. to 136 practicable nights, or 22 per cent.

Quebec, in 12 months of 1849, 44 obs. to 182 practicable nights, or 24 per cent.

Montreal, 26 observations (descriptions imperfect.)

Kingston, 63 observ. to 178 practicable nights, or 19 per cent.

Toronto, 63 observ. to 199 practicable nights, or 31 per cent.

London, 26 observ. to 172 practicable nights, or 15 per cent.

In this list there are but two Auroras seen at all the stations without exception: they occurred on Feb. 27 and July 23. There are eleven dates on which it was seen at Newfoundland and London or Toronto, but missed at some of the intermediate stations. These dates are—Jan. 14, Feb. 19, March 17, April 24, July 31, Aug. 12, Sept. 12 and 18, Oct. 7 and 30, Nov. 28. None of the stations, singly, give quite so many appearances as the previous year; the five Canadian stations, which gave 121 appearances in 1848, gave but 99 in 1849, the remainder being made up from the other commands.

These observations, having been continued throughout the night, may be referred to for testing an apparent law, which was noticed in the observations made by Sergeant Henry and myself at Lake Athabasca, in the winter of 1843-4, and which is fully confirmed by the series at Toronto, namely, that the Aurora Borealis does not appear with equal frequency at all the hours of darkness, but is subject, like most other phenomena in Meteorology, to influences having a diurnal period as well as an annual one. The present series places the hour of maximum frequency at 10 or 11 P.M.; probably a longer continuance will be necessary to fix it accurately.

* One of the uncertain appearances at Toronto is confirmed by other Observations.

Table, showing the number of times on which Aurora is reported at each hour of the night.

STATION.	5	6	7	8	9	10	11	Mid.	1	2	3	4	5	6
1848.														
Quebec	2	5	16	23	25	31	32	23	20	16	17	12	7	1
Montreal		1	3	11	18	22	23	21	18	17	15	7	2	
Kingston		4	5	17	26	30	32	32	24	22	12	9	2	
London		1	6	12	18	17	14	11	9	6	7	6	3	
	2	11	30	69	87	100	111	87	71	61	51	34	14	1
1849.														
Newfoundland	1	8	15	19	21	32	34	27	20	18	11	6	6	1
Quebec		2	5	12	11	20	15	12	9	5	4	2	3	
Montreal		3	3	5	4	8	11	11	11	9	6	4		
Kingston		1	6	10	11	14	9	8	6	5	6	3	1	
London			1	9	15	17	14	9	11	4	3			
	1	14	30	55	62	91	83	67	57	41	30	15	10	1
Two years	3	25	60	124	149	191	194	154	128	102	81	49	24	2

Any Observation before 6, P.M., is here set down at 5, and so on.

The Aurora appears in Canada in every month of the year. The greatest number of observations is in April, and there is a very marked excess in February, March and April of each year over any other period. Taking them by the seasons, there are—

In the Spring,—March, April, May, 1848, 40; 1849, 41.

In the Summer,—June, July, August, 1848, 21; 1849, 29.

In the Autumn,—September, October, November, 1848, 31; 1849, 34.

In the Winter,—December, January, February, 1848-9, 37; 1849-50, about 20.

I believe that this number of observations is greater than has ever before been made in so low a latitude, and am inclined to think that it is very high even for Canada. The greatest number of observations at Toronto in any previous year since 1840, was 37, in 1846; the average of the ten years being 35. The greatest number in any one year (from 1837 to 1848) collected in the Regent's Reports, is 75, the average 50. The greatest number observed by M. Hansteen at Christiana, in Norway, Lat. 60° from 1837 to 1846, in any one year, is 52—the average 33. This result is not more than may have been expected from the great advantages afforded by the duties of N. C. Officers on Guard, for observations of the kind, and from our comparative proximity in geographical position to the magnetic pole, with which, in some way, not at present well understood, the phenomenon appears to be connected. But it is highly satisfactory to find that the pains taken have been so successful. For the next twelve months, observations will be continued at Toronto, throughout the night, and the observatory will be provided with a number of self-registering instruments, recording every change of the magnetic elements mechanically. Hence it will be of great consequence not to lose the key which Auroral displays at a distance may possibly afford to those movements in a single instance.

At some of the stations the N. C. Officers have got out of the habit of at-

tempting to describe what they see. This is to be regretted. Measurements with the wooden quadrant, or careful estimations of the heights and azimuths of arches, are frequently wanting, and the time is not always stated. This remark applies particularly to the termination of the displays, which are frequently said, in general terms, to have lasted until daybreak; in all such cases, the observer should state, as nearly as he can, the latest moment at which he was sure of seeing the light—watch its extinction attentively, and endeavour to decide for himself whether that is the consequence of the increase of daylight, or of the actual termination of the phenomenon. Very early appearances should, for similar reasons, be particularly described; for instance, it is recorded to have been seen at London, C. W., on the 24th July, 1848, at ½ p. 7, P. M., which is but a few minutes after sunset. Such a rare observation should have every possible confirmation. These particulars might at least be noted with very little trouble at the hours of going rounds. I should be glad also to see a more explicit statement every morning of what the character of the night has been, as regards the possibility of observing Aurora, so as to give some precision to the rough calculation attempted above of the per centage of nights in which it is seen, to nights in which it could be seen if it occurred. The expression "fine night" is ambiguous. In any statement of this kind, the point to be chiefly referred to is the condition of the northern half of the sky—the rest is of little consequence. I should be obliged by a memorandum on the next Register of the nature of the look-out at each station, and how nearly down to the horizon the view from NE. to NW. extends; some difference in this respect is perhaps the reason why the observations are more numerous at some stations than at others.

Dates of all the Observations included in the foregoing comparison.—The stations are expressed by their initials:—N, Newfoundland; Q, Quebec; M, Montreal; H, Halifax; K, Kingston; T, Toronto; L, London, C W; P, Penetanguishene; F, Fenelon Falls; B, Bruce Mines, Lake Huron. The last three are additional stations, from which I have been favoured with communications.

1848.

January.—3, K T; 9, L; 11, K T L; 15, K L; 16, K T L; 23, K; 28, M T L; 29, K.

February.—6, Q M K; 7, Q M K T; 8, Q M K T; 12, M; 13, M; 14, M T; 20, L; 21, Q M K T L; 22, T; 23, Q M K T L; 24, Q M K T L; 25, Q M; 28, Q; 29, K.

March.—1, M T; 6, M K T; 8, T L; 10, K; 14, Q M T; 16, Q M K T; 19, K T; 20, Q; 23, Q; 24, Q M K T; 27, T; 30, M K; 31, T?

April.—1, Q M K T L; 2, Q M K T L; 3, Q; 4, K T; 5, Q M K T L; 6, Q M K T L; 7, Q M K T L; 9, M K; 15, M K T; 16, K; 17, Q; 20, Q; 21, K H T; 23, T L; 24, T; 26, Q? 29, Q M K T L; 30, Q M K T.

May.—2, T; 4, Q; 7, M K T; 8, Q T; 17, Q T; 18, Q K; 22, K; 24, K T L; 25, K T; 26, T; 31, K T L.

June.—3, M K; 5, K; 9, M; 22, T; 28, L; 29, Q K T.

July,—3, K T L; 4, K T; 5, K; 10, Q M; 11, K T; 24, L; 27, L; 28, K; 29, K.

August.—1, M K; 3, M; 8, Q M K T; 21, Q M K T L; 22, Q M L; 28, T.

September.—3, Q K; 4, Q M K T; 17, K; 18, Q K; 20, T; 29, T; 30, T.

October.—2, Q; 4, Q; 8, Q M K T; 17, T? 18, T; 19, L; 22, K T L; 23, M K T; 24, T; 25, Q T; 27, Q; 28, Q; 29, K; 30, Q; 31, K T.

November.—10, T? 15, T? 16, T; 17, Q M K T L P; 18, Q T; 19, Q T; 21, T L; 22, Q T; 23, Q K T P; 25, T? 26, N Q K T L; 27, N T; 30 M.

December.—2, N; 8, K; 13, N; 14, N; 17, Q K T L; 18, N K T L; 19, Q

L; 21, N; 22, K; 23, N P; 25, N; 26, N Q M K.

1849.

January.—7, N Q; 11, Q; 14, N Q K T H; 17, P; 22, T; 23, N; 25, N; 26, T.

February.—3, Q; 9, Q; 12, Q M; 13, Q H T; 14, T; 15, N Q M P; 16, N Q T L; 17, P; 18, Q K T L P; 19, N Q H T; 20, N Q H; 21, Q H; 22, N; 23, N; 25, Q; 26, N K T P; 27, N Q M K T L H P.

March.—6, Q; 9, L; 15, K; 17, N Q K T L H B; 18, Q M K T L B; 21, T; 25, T H; 26, T L; 27, T; 30, N K T L; 31, T.

April,—1, T H; 2, Q M L; 4, H; 11, K; 13, M T H; 14, Q; 15, N; 16, T L H; 17, N Q M H; 18, N Q M; 20, N T H; 21, Q H; 22, N T; 24, N M K L; 25, N; 26, N; 27, N Q; 28, L; 29, Q H? 30, N.

May.—1, Q H; 6, H; 11, N H; 14, T L; 17, T H; 20, T; 21, T; 23, T? 25, K T; 26, K; 27, M.

June,—6, Q; 8, K; 14, Q; 16, Q? 17, M; 18, M; 20, N Q T L; 22, T; 24, K L; 25, H? 27, Q.

July.—3, H; 4, H; 5, T; 9, N T; 10, T; 12, L; 20, T; 21, N; 22, Q T; 23, N Q M K T H L; 26, T; 31, N Q M K T L.

August.—2, T; 4, N K; 12, N T F L; 13, N M K; 18, T L; 20, N; 21, K T; 22, Q H.

September.—3, Q; 7, N T; 8, K T L; 9, M; 12, N K T H; 16, N M; 17, T F; 18, N Q M K T H F; 19, Q M H F; 21, H; 24, H T; 29, N Q M K.

October,—7, N Q M K T L; 9, M; 10, T; 13, Q K T L; 14, Q M T H L; 17, N K; 18, K T H L; 19, K H; 20, K; 21, N; 24, M T; 30, N Q T? L.

November.—10, N; 12, T K; 13, T; 14, K T; 15, F; 18, K T; 19, T? 21, T; 25, T? 26, Q T; 27, K; 28, N Q M T; 29, N.

December.—11, M T; 12, N T; 18, T; 20, N.

I will only add that these observations promise to furnish a valuable body of information respecting the Aurora; and will have a very important bearing on the observations to which the establishment at Toronto is devoted. While, therefore, I take this occasion of conveying my thanks to my brother Officers, and to the N. C. Officers of the Regiment, for their assistance, I beg to request that the system be persevered in.

Magnetical Observatory,
Toronto, 27th March, 1850.

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*Instructions for Observations of the Aurora**.—N. C. Officers on Guard have an opportunity of observing at every second hour whether any Aurora is visible, and by encouraging the more intelligent of the men, when their posts are favourably situated for the purpose, to notice and to report any display of short duration which may occur in the intervals, will be able to state every morning whether Aurora has been seen at all during the night, and if not, whether the state of the sky was favourable or otherwise to observation. Private observers should make a regular practice of looking for Auroras, every clear evening, from dusk to as late an hour as may be convenient, recording the result whether there has been an Aurora or not, together with the times of observation. The notes may be short, but they should be clear and precise. Wet or cloudy evenings should be noted.

Auroral Phenomena may be divided into the following classes:—

(1.) A faint light in the north without definite form or boundary.

(2.) "A diffused light, defined by an arch below."

(3.) Arches resembling the rainbow in size and form, but of a uniform white colour, sometimes retaining their apparent position for a considerable time without change.

(4.) "A dark segment under the arch," if any star can be distinguished within this space, the circumstance should be particularly noted.

(5.) "Floating patches of luminous haze or cloud."

(6.) Beams, rays, streamers, transverse and serpentine bands, sometimes tinged with colour, and undergoing more or less rapid changes. It may be necessary to define the last two expres-

* The original instructions are here extended and improved by the incorporation of some particulars from those issued by the Smithsonian Institute.

sions—Transverse bands are frequently nothing more than arches which have advanced nearly to the zenith, or perhaps, have passed it, and retain their regularity of form, although now projected nearly as straight lines. Serpentine bands rather resemble curtains of light, and undergo in their outline changes like those of the folds of a curtain, they are usually the most brilliant part of a display.

(7.) "Auroral Corona, or a union of beams a few degrees to the south of the zenith."

(8.) "A sudden appearance of dark clouds" in the region recently occupied by the Aurora.

(9.) "Sudden appearance of haze over the whole face of the sky."

(10.) Lastly, a disposition in light clouds at a great elevation to arrange themselves during daylight, in parallel lines, crossing the meridian at right angles, has been frequently suspected to be connected with the Aurora, or with a common source.

The observer should state in plain and definite language the general character of the Aurora, with reference more particularly to the foregoing characteristics. At Canadian Stations every observation of the azimuths of the extremities of an arch, when they are well defined, its span along the horizon, its height above it, or its place among the stars, will be valuable for comparison. At all stations the time at which the light passes to the south of the zenith should if possible be stated, as well as the precise times of very brilliant or active displays, which frequently last but a few minutes. Lastly, it should be noted how much beyond the zenith, to the south, the bands of light descend. The degree of brilliancy may be denoted by the terms—Faint, Moderate, Bright, Very Bright.

SURGERY.

On the objections which have been made against the use of pressure for the cure of Aneurism.—Mr. Tufnell, in a paper read before the Surgical Society of Ireland, reviews the objections which have been urged against the employment of compression for the cure of aneurism, "These are," he remarks, "that compression is *painful, wearisome*, and *ineffectual*. I will grant that it may be rendered such if the mode of treatment be not thoroughly understood, or if instruments for controlling the circulation be employed which are not suited to the purpose, or are used with an unnecessary degree of force. In the first place, in adopting this treatment, it is desirable that the principle of cure should be fully explained to the patient, and that he should be made a willing party in carrying out the surgeon's designs; that, instead of being told to keep up pressure upon the artery at any particular spot for a given length of time, he should be recommended to raise the pad directly when it begins to cause annoyance, taking care, of course, that before doing so compression is made on another portion of the vessel.

"Pain, I may add, is often needlessly caused by not paying sufficient attention to the *minimum amount of pressure* that will control pulsation in the sac, but as if to make assurance doubly sure, giving two or three additional turns to the screw after this object has been attained. It is to the screw, indeed, that the suffering hitherto felt may principally be referred. Pressure in one form or other has, almost in every instance, been effected by its aid, and whether used in a greater or less degree, it has invariably been a dead, unyielding force, allowing no play or contraction to the muscular fibre beneath. This, the only valid objection to the use of compression, has now been entirely removed by the apparatus of Dr. Carte, and the introduction of an elastic pressure through the medium of vulcanised India-rubber.

"In this instrument, the screw, as a means of compression, has been done away with altogether, its place being supplied by a band of vulcanized India-rubber. The advantage it offers are immense. Whilst I have never known a patient to bear compression by the screw for a longer period than *three* hours at once, in the case just detailed, Dr. Carte's apparatus was worn for double that time, and I have known it kept on for a longer period still. When used in the case of Atkins, the instrument was incomplete. It was so contrived that when the pad was let down on the artery it could only be lifted off it by manual force. This required the

patient to raise himself to the sitting position in order to obtain a purchase, and to remain so, using considerable muscular exertion, until the parts beneath had so far recovered their tone that the instrument could be reapplied. Its employment being, on this account, interdicted in cases where a suspicion existed of internal arterial disease, Dr. Carte was induced to add a male and female screw. By this simple modification every objection has now been removed; a few turns of the former raise the pad from off the vessel, whilst the latter retains it there. The infliction of pain by this instrument is really so slight that I am certain the strongest opponents to compression will, upon a trial, withdraw this charge.

"The second objection raised to compression is, that the treatment is *wearisome* and *prolonged*. This, as a general assertion, is not borne out by facts. There may be particular instances where the cure has been protracted to an unusual length; but, taking the average of the time which has hitherto been consumed in the cases that have been made public, nine-and-twenty days only have been occupied in the progress of cure, and this, too, be it recollected, at a time when the treatment was in its infancy and but imperfectly understood. Granting, however, that nine-and-twenty days are required for the cure by compression, let us contrast this period with the average duration of treatment by the ligature and knife.

"From the time that a patient with aneurism is admitted into hospital, until he is placed upon the operating table, we may, I think, safely regard it as a week; from the application of the ligature to its separation we may consider as sixteen days longer; and for closure of the wound and cicatrization we may reckon on seven days more, or a time, upon the whole, fully as great as that hitherto occupied by compression. I have taken the average of all the cases hitherto treated by compression, and find it to be nine-and-twenty days. Were I to do the same with every case where ligature has been employed it would greatly exceed this time.

"But the sweeping assertion that compression is *wearisome* and *prolonged*, ill accords with cases that can be adduced, where not even days but hours were sufficient to complete the cure. I will specify two that within a recent period have come under my own observation. In the first of these, ten hours only elapsed before the pulsation had ceased; and in the second, a large femoral aneurism was solidified in thirty-three. This latter case is worthy of record. The patient was sufficiently recovered to be enabled to leave the hospital in ten days, *and to be married within three weeks from the time pressure was first commenced.* Can the advocates for the knife bring a parallel case to this?

"Lastly, the treatment by compression is said to be *ineffectual*. In reply, I would refer sceptics to the fact that, in a period of nearly four years, in all the hospitals of Dublin, and in private practice as well, the ligature has only been resorted to once, and this a case of traumatic aneurism at the bend of the arm, where the operation subsequently showed a high bifurbation to exist. I would, however, refer those who doubt to the records of this Society, to the able work of Dr Bellingham, and the tables of Dr. Edwards Crisp. The latter may not prove satisfactory to those who affirm that the treatment by compression is *dangerous*, whilst that by the ligature is *easy, gentle,* and *safe*.

"In the work of Dr. Crisp are detailed 206 cases of femoral and popliteal aneurism. In 185 of these the vessel was taken up, and the result of which operations is shown in the following table:—

Died from the effects of the operation	33
Recovered, after suffering subsequent amputation	10
Recovered, after sloughing of the sac	3
Recovered, after mortification of the toes	1
Recovered, after sloughing of the integuments	1
Making a total of	48

"So that more *than the fourth of the cases treated by the ligature either terminated fatally, or were maimed for the rest of life.* This, too, not occurring in the practice of young and inexperienced men, but to Hunter, Pott, Cline, Cooper, Bell, Guthrie, Lawrence, White, Brodie, Carlisle, Syme, Travers, and others of

almost equal note. From this analysis, therefore, so far as regards the ligature, the conclusion to be drawn is, that, in the generality of cases of aneurism of the extremities, it should be laid aside. What object is to be gained by its use that is not equally attained by compression? Does its application exert any specific influence upon the sac? If so, I should, for information's sake, be glad to have it explained, for at present my conviction is that, as far as regards the aneurism itself, the effects of compression and the action of the ligature are *identically the same*. That in both cases the direct current is arrested, and the impulse of the heart no longer communicated to the sac. That the blood, previously propelled with an injurious momentum, now trickles harmlessly through the collateral vessels, eddying in its passage in the hollow of the tumour, and lining it with fibrinous layers.

"Such I believe to be the *modus operandi* of cure in either case, and where the condition of an aneurism is such as to allow of this effect being produced by means of the ligature, I am certain it will equally be the result of compression *if properly applied*.

"As to the success attendant upon the employment of compression, I will only add that, since the year 1843, no less than *thirty five* cases have been published, in which the disease has been permanently cured without injury to life or limb. With these facts openly detailed, I consider that in the present day no surgeon is justified in taking up an artery for the cure of external aneurism, *until compression has been tried and failed*, any more than he would be in operating for hernia without attempting to reduce the bowel.

"When prejudice can be overcome, and compression be as generally adopted as it has been in this metropolis, I feel certain that the operation of tying will be very seldom resorted to, and I do believe in the words of a recent writer upon the subject—'We may confidently look forward to the day when ligature in aneurism of the extremities will cease to hold a place in operative surgery, when it shall have become a matter of professional history, a practice of bygone days.'"—*Dublin Medical Press.*

MEDICAL JURISPRUDENCE.

[CONTINUED FROM OUR LAST.]

Trial of Doctor Webster for the Murder of Doctor Parkman.—Dr. C. T. Jackson.—Am a chemist by profession. Have followed practical chemistry for the last ten years. Was called to the examination of the remains found at the Medical College on Saturday afternoon, Dec. 1, 1849. Met Dr. Martin Gay and Dr. Winslow Lewis. The chemical examination was assigned to Dr. Gay and myself. Were shown the remains of a human body, and the contents taken from a small open furnace; took observation of the remains. Did not think they had been used for anatomical purposes. They had not been dissected. The manner of opening the body I thought indicated some knowledge of anatomy.

Heard the testimony of Drs. Lewis, Stone and Gay, and agree with it. Was acquainted with the late Dr. George Parkman. He was a tall and slender man. I thought him rather flat and broad on the pelvis. Thin on the lateral view, and not so much so in front. Discovered nothing dissimilar from what I supposed to be the conformation of Dr. Parkman.

The flesh showed indications of having been subjected to a strong solution of caustic potash. [The analysis of the contents of the furnace, and other articles, was presented in writing, to which Dr. J. testified as given before the coroner; and Mr. Bemis read it.]

The bones had the appearance of being exposed to fire—were much broken and partially fused among the cinders. A tooth with a hole in it, having the appearance of having been filled by a dentist—a block of mineral teeth—globules of gold—a pearl shirt button—pieces of an alloy of tin and lead, were found. The ashes yielded globules of gold and silver—30 grains of gold were found.

Examined the flesh and skin of the thorax, and found it corroded as if by potash, and submitted it to analysis; it yielded strong alkali. Some parts of the skin appeared singed, as if subjected to the action of fire. Dissected out the arteries of the thigh, and delivered them to Dr. Gay to see if any zinc or arsenic was to be found in them.

I was instructed by the Attorney General to take possession of articles left by

Dr. Gay [deceased.] Did so. Found the very papers that I delivered to Dr. Gay, and gave them to Mr. Crossley, who had begun the analysis for Dr. Gay, to complete the examination.

Potash softens and dissolves human flesh gradually, and, when heat is applied, very rapidly. If attempting to dissolve a body in potash, would dissolve the potash and boil it, precisely as in making soap. It would depend on so many circumstances, he could not tell precisely how long it would take to dissolve a body; if cut up in small pieces it might be done very rapidly.

It would take nearly half the weight of the body, of potash, and would require a large kettle. Should think it would take about 70 lbs. of potash to have dissolved Dr. Parkman's body. Less than that would have destroyed the possibility of identifying the remains. Went through Dr. Webster's laboratory. The largest vessel I saw was a tin boiler, such as is used for washing clothes —about from 1 foot to 15 inches square. This vessel was not large enough to have disposed of a thorax or thigh, without its being cut up in pieces. Potash is the best thing to dissolve a body, because it can be used in common vessels. Nitric acid would be the next best. Nitric acid would require vessels of porcelain or glass. Should think it would take about the weight of the body of nitric acid to dissolve it. If heated, it would give off very little nitric acid gas, but if boiled, a very large quantity. Decomposition would be most rapid if boiled. The gas is very disagreeable and unhealthy, but the draft of a chimney would protect the operator. I saw there several bottles, containing five or six pounds each, of nitric and muriatic acids; there might have been ten pounds of nitric acid. Some drops of green liquid on the stairway leading from the rear of the lecture room to the laboratory, were taken up by Dr. Gay by means of filtering paper; I have since examined that liquid, and it was nitrate of copper. The spots were numerous all over the staircase, and side wall— most abundant towards the bottom; had the appearance of being spilt on each stair separately, and not running from one to another. Nitrate of copper is very dilatory in drying up. Its taste is very astringent, caustic, and like copper. Have transferred the microscopic examination of the action of nitrate of copper on blood, to Dr. Wyman; a powerful microscope is the best instrument to discover the effect of acid upon blood. He also took the pantaloons and slippers. The punch pieces, made of copper, found in the ash-pit, had nitrate of copper upon them. They were of the same kind as others found in Dr. Webster's drawer in the room above. A large number were found in the ash-pit, much acted upon, showing that they had been used for making nitrate of copper. I think Dr. Gay had the pearl shirt button, and I have not been able to find it. I found 45 grains and 6 tenths of gold, by washing my portion of the contents of the furnace. Dr. Gay found 47 grs. in his. Mr. Andrews also brought me 81.05 grains. Total, 173 grains 65-100ths. The 173 grains would be worth $6,95, standard value. Some gold still remains in the ashes, in very fine particles. The appearance of the bones taken from the furnace indicated that they had been subjected to great heat. I have been acquainted with Professor Webster several years. The large sheath knife found in his laboratory at the College, I noticed in his laboratory in Mason street in 1846. When it was shown to me on Monday or Tuesday in Grove-street College, it had the appearance that an attempt had been made to clean it. It had whiting and oil upon it. I found this by scraping it off and analyzing it. The oil was not quite dry —was like soft putty. Dr. P. was about my height. He appeared so when he stood erect. I am a trifle over 5 feet 11 inches. If flesh had been consumed in the furnace, the odor would have been carried off. It was an assay furnace, and therefore covered when in action. We saw the cover there. It was of the kind used for an assay furnace. There was about half a peck of ashes, and a couple of quarts of cinders and anthracite coal.

Cross-examined.—I should not have supposed the remains were those of Dr. Parkman, if he had not been missing. I draw no conclusions from the sea-salt with the potash. It is found with potash. Some of the hair was curled and singed, as if it had been exposed to flame. Only one side of the thorax, its two ends and back, had been subjected to the action of potash. The thigh found with the thorax had been softened by

the action of fire as well as potash. The head of the thigh was smoked. If cut up into small pieces, and with a very large vessel, it would take but a few hours to dissolve the flesh, without the bones. It would require weight for weight of acid and flesh, and heat to do it. In nitric acid the bones might be dissolved in half a day. The green fluid spots might have been several days on the wall. They might have been there two weeks. The oil and whiting near the handle of the knife I supposed were used to clean the silver on the handle. The potash had not been long on the remains—it was still caustic. The softening was produced by the joint action of potash and fire. There was little effluvia from the body—it had an alkaline smell. The softening would be soon effected by the joint action of potash and fire, which gelatinized the skin. Nitrate of copper would produce the same brown stains on Norway pine that we found on the stairs. [Exhibited spotted chips from the stairs.]

The following is the deposition of Dr. Jackson, read by Mr. Bemis:—

Dr. Charles T. Jackson being duly sworn, deposed as follows:—I am by profession a physician and chemist. The 1st day of December, 1849, I was requested by Mr. James H. Blake to accompany Dr. Martin Gay in making some chemical and other examinations at the Medical College in the city of Boston, and at 4 o'clock in the afternoon of that day I went with Dr. Gay to the Medical College, and there met with Dr. Winslow Lewis, jr., and others, with the Coroner of the County of Suffolk, and the jury of inquest. That we made a general examination that afternoon, and adjourned till Sunday morning, when we resumed our examination—Dr. Jeffries Wyman being associated with us and aiding in the examination of the bones found in the furnace of the Chemical Laboratory, and also took chips of wood on which he had been shown certain brown stains, which were submitted to Dr. Wyman to examine.

Dr. F. S. Armstrong also assisted us in the selection of fragments of bone from the cinders of the furnace. The bones found by us were in a mass of cinders and ashes which had been removed from the furnace by the police officers, and placed in a box, and had the appearance of having been exposed to fire. They were much broken, and were, in some instances, partially fused into the cinders. We identified at that time, the following bones: right os calcis, right astragulus, tibia and fibula phalanges, resembling those of the ring or little finger, coronoid process of the lower jaw, and numerous fragments of human skull, a human tooth with a hole in it, appearing as if it had once been filled by a dentist's operation, three blocks of mineral teeth, with platinum rivets in one of them entire, but wanting the gold plate on which mineral teeth are usually set. A pearl shirt button was also found in the ashes of the furnace, and was partially calcined, numerous little copper cups found in one of the laboratory drawers—they did not appear to be burnt—many pieces of glass were found among the slugs and cinders of the furnace, masses of metal were also found which proved by analysis to consist of, in 25 grains, tin 12.19, lead 11.95, total 24.14—hence it is evidently tea chest lead—the cinders of the furnace pounded and washed yield globules of gold, some silver and a little copper: in the portion of slugs and cinders worked by me, thirty grains of gold were found—my attention having been called to the state of the human body which Dr. Lewis was examining. I took portions of the skin and muscles from the thorax and tested them by reddened litmus paper and found those parts strongly charged with alkali. I found the discolored thighs also had been imbued with alkali and stained by the tan. I took portions of the skin from the thorax and thigh, and carried them to my laboratory, and ascertained by chemical analysis that the alkali contained in them was potash mixed with a very little sea salt; the skin in several places appeared to have been corroded by the joint action of potash and heat; the thorax had singed hair on it, showing the action of fire and probably of flame since the burning was superficial. I found no alkali in the interior of the thighs, nor in the flesh beneath the skin of the thorax; the muscles of the cut surface at both ends of the thorax were strongly alkaline; I observed that the skin near an opening near the 6th and 7th ribs was quite tender, and the edges of the opening into the thorax were corroded as if by potash; I dissected the arteries, and some of the leg, and gave them to Dr. Martin Gay; I subsequently saw

Mr. Richard Cross in my laboratory, in his presence examined a portion of one of these vessels with the adhering muscle for arsenic and zinc, and saw that no trace of those substances was found; the spots on the walls, floor and furniture showed us were all committed to Dr. Jeffries Wyman, who cut chips from them in my presence. A pair of slippers was submitted to us by the officers, and Dr. Jeffries Wyman cut pieces off from them in my presence and took them away with him; Dr. Martin Gay took portions of the cinders and metals for examination, and his results should be compared with mine, in order to ascertain how much gold was found among the cinders. CHAS. T. JACKSON.

Attest, J. L. ANDREWS.

Re-examined.—The ashes were partly of wood and hard coal.

Richard Crossley.—I made experiments on certain blood-vessels, at the request of Dr. Martin Gay, to ascertain if they had been injected with arsenic acid, or chloride of zinc, and found no appearance of those substances.

Dr. C. N. Keep.—Am a physician and dentist; have been in practice nearly thirty years, and have given attention to mineral teeth. I knew Dr. George Parkman, as early as 1822. In 1825 he employed me as his family dentist, and ever since that time, so far as I know. I was shown a block of mineral teeth, by Dr. Winslow Lewis, Jr., on the Monday after Thanksgiving last. I recognized them as the teeth I made for Dr. Parkman in 1846. [The teeth found in the furnace were exhibited to the witness.] These are the same as shown by Dr. Lewis. Dr. Parkman's mouth was peculiar in many respects—especially in the relation between the upper and lower jaws; and thus the impression left on my mind was very distinct; I remember these peculiarities with great exactness. The circumstances under which the teeth were ordered, were peculiar. Dr. Parkman asked how long it would take to make the teeth. He said he wanted to be present at the opening of the Medical College, and might wish to speak; and he did not wish to order them unless they would be ready by that time. The time was rather short. The peculiarities of the mouth required as much skill as could be used in fitting the teeth. I began to work as soon as possible, and gave a large portion of my time to it, from day to day. I saw him frequently while it was in progress; and in consequence of these circumstances, remember very distinctly. I proceeded in my usual mode in taking an exact *fac simile*, or impression of the gums. It was done by taking a portion of soft wax, supported by a piece of metal, or mouth cup, which being placed in the mouth was pressed carefully upon the gum of each jaw separately, and then the impression was taken out. Liquid plaster was then poured into the impression, which, in twenty minutes, became hard, and could be taken out. Here is the plaster-cast of Dr. Parkman's lower jaw taken from life. [Exhibited.] The natural teeth were cut off, in the plaster-cast, of which there were four, besides three stumps. He had lost all his upper teeth.

[The witness then described the process of making the pattern plates, by metallic dies.]

The next step was to make gold plates from the same dies, aided by the pattern plates, which had been tried to the doctor's mouth. Then the relation between the upper and lower jaw was to be found. The lower plate was fitted to the lower jaw with soft wax upon it, and so with the upper; the jaws were then shut. The relation of the jaws, showing the receding of the upper jaw, was thus obtained.—This peculiarity was strongly marked in the doctor's mouth. I have here two sets of casts, one showing the form of each jaw; and the other, the relation of the jaws to each other. The teeth were made in blocks. After getting the pattern, this block was made in one entire mass, and then the teeth carved. The great irregularity of the left side of the lower jaw caused much difficulty. The upper set was made in one entire piece, and cut into three pieces before baking. These pieces are called blocks. The upper teeth of Dr. Parkman were in three blocks. The lower teeth were also in three blocks, but not made whole, in consequence of the natural teeth which remained. On the left side of the lower jaw was the largest block; the next largest was opposite—and both were back teeth. The three blocks of the lower jaw were also attached to a single gold plate, which completed the upper set. The upper and lower teeth were

connected by spiral springs, which enabled the patient to open and shut his mouth with less danger of displacing them. The pins which fastened the teeth were platina instead of gold. There was an accident which injured one of the teeth, which rendered it necessary to make a front upper block anew. This occupied me nearly all night; but they were finished thirty minutes before the opening of the Medical College. I did not feel entirely certain that they would be quite as I wished them, so I requested of the doctor that I might see him soon. When I next saw him, he remarked that room was wanting for his tongue. In order to obviate that difficulty, I ground the lower blocks on the inside, to make more space, which at that time was not accomplished with much ease, and required a small wheel on account of the angle formed by the teeth and the plate. The grinding removed the color of the gum, and also the enamel of the teeth. Two weeks before his disappearance, he called late in the evening, having broken the spring, which I repaired. The day before his disappearance, he called on me to inquire respecting a servant who had lived with me.

Monday after Thanksgiving, Dr. Lewis presented to me the portions of mineral teeth, saying he was requested to bring them to me for examination. On looking at them I recognised them to be the same teeth I had made for Dr. Parkman. The most perfect portion which remained was the block belonging to the left side of the lower jaw. I recognized the shape and outline to be the same with those which I had laboured on so long. Several of the other portions had been much injured by exposure to fire. I proceeded to look for the models by which those teeth were made. On comparing the most perfect block with the model, the resemblance was so striking that I had no doubt. This portion which I now hold in my hand belonged to the right upper jaw. This belonged on the left upper. This is the remains of the front upper block, more injured than the others. The left lower block is nearly entire. [The witness here exhibited to the Court and Jury the left lower block of teeth, with the mould in which it was formed. He also explained to them the manner in which the teeth had been ground to give more room for the tongue.] I find embedded with these portions of mineral teeth portions of gold and minute portions of bone. This small portion of the bone is cancellated—peculiar to the jaw-bone.

The teeth were in the Doctor's mouth the last time I saw him—the day before he disappeared. The presumption is very strong that they were in the mouth when the head was placed in the furnace; for, when recently worn, they absorb small portions of water, which, when heated rapidly, would explode them, and they would go into a multitude of pieces. If the teeth had been removed from the head, the springs by which they were connected would have thrown them apart, and they would not probably have been found fused together. I find, fused in with these mineral teeth, a small portion of the natural jaw.

Cross-examined—These teeth were all exhibited to me at the same time by Dr. Lewis; I knew the teeth when I first saw them. Dr. Parkman's name was written on the models at the time the teeth were made; I preserve for use in case of accident. Dr. Parkman had a former block, which was displaced.

Re-examined.--The different portions of the teeth, when they came from the furnace, were all in one mass, so that they could be lifted up together; but afterwards separated. I recollect that, in the examination before the Grand Jury, the roots of a natural tooth were accidentally broken off from one of the blocks of mineral teeth.

Dr. Lester Noble.—I was an assistant of Dr. Keep in the autumn of 1846, and continued until July, 1849. I recollect working upon teeth for Dr. Parkman in 1846. The handwriting on the models—"Dr. Geo. Parkman, October, 1846," is mine. I examined the teeth found in the furnace, and recognized them to be Dr. Parkman's from the general shape and configuration. It struck me at once. In looking them over carefully, I noticed a hole between the second bi-cuspid and the first molar tooth. I also noticed a surface which appeared to have been ground, and recollected that those of Dr. Parkman had been ground in that way—that I saw Dr. Keep grind them. I also noticed a small margin near the plate, unground,

which could not be reached without removing the plate. I see good reason to believe these to be the teeth of Dr. Parkman, and none that they are not. I have not the slightest doubt but that they are the same I worked upon for Dr. Parkman. I remember the circumstances of making these teeth, on account of Dr. Parkman's great punctuality in attendance when he engaged to call in from time to time: they were to be finished for him on the occasion of the opening of the Medical College, and were so finished just in season. I went to the meeting, and sat so as to observe, when the doctor spoke, how the teeth operated. When he was complimented by Governor Everett for his generosity in giving the ground for the College, I thiuk Dr. Parkman replied by bowing, but said little or nothing if I remember right.

Dr. Jeffries Wyman.—I am Professor of Anatomy in Harvard College. I went to the Medical College on Sunday, Dec. 2, and found several gentlemen there. My attention was called more especially to the fragments of bones found in the furnace. I have a catalogue of these bones. These, in this box, are the fragments found at the College. They are registered under 35 heads. My attention was directed to the remains of flesh, though not particularly. These remains showed no indication of having been used for anatomical purposes. On examining the thorax I was struck with the fact that the sternum was removed in the manner usual in *post-mortem* examinations; as well as its separation from the collar-bone and the first rib. The route which the knife passes is such that a person unacquainted with the operation would have great difficulty. There is only one way. The separation of the thigh-bone from the hip indicated the same knowledge: I did not observe as to the separation of the head from the trunk. The saw is not usually employed for purposes of anatomical examination. The quantity of hair on the back was very unusual—on each side of the spine, and half or third of the way down the back. If death were occasioned by a blow, and the stab were immediate, I should look for a considerable flow of blood. *Post-mortem* examinations are not necessarily attended with much loss of blood; though it is usual to spread cloth by the sides of the body.

I examined certain spots on the sides of the stairway leading from the upper to the lower laboratory. Some of these were tobacco spittle, But there were others higher up, of which I discovered nothing definite. On Sunday, these were moist. They were said to be nitrate of copper. I have experimented to determine whether nitrate of copper would destroy the globule character of blood. I placed some blood under the microscope, and added some nitrate of copper. In the course of a few hours the discs of blood had disappeared.

There were brought to me a pair of slippers and a pair of pantaloons. These are the same slippers, and these are the same places where I cut out certain spots. [These slippers were then shown to the jury.] I have satisfied myself that these spots were blood. These are the same pantaloons. Dr. Webster's name is marked upon them. I cut the spots from them. I obtained a sign from these spots which satisfied me that they were blood. I think the drops of blood did not fall upon the pantaloons from any great height—say three feet—otherwise the drop would have assumed the elongated form on the surface upon which it fell. The spots are on the lower part of the outside of the left leg. [A paper was also shown, found by officer Heath in the laboratory, under the table, which the witness said contained two spots of blood.]

The bones during my examination I arranged in order; those of the head, of the neck, and other parts, were selected out and put by themselves. [Witness proceeded to explain minutely to the Court and Jury, by a diagram, the natural location of the different fragments of bones. From the jaw bones found, Dr. Wyman had made a model of the lower jaw, which corresponded in a remarkable manner with the model in the possession of Dr. Keep.] There were no duplicates of any of the bones, and the fragments were from almost all parts of a human frame. There were some particles of bone attached to one of the blocks of teeth. There are 16 teeth in each perfect jaw of a person. Nitrate of copper applied to blood produces a blueish tint of color. [Witness explained at some length the action of heat upon bones.]

Cross-examined.—I should think nitrate of copper effectual to remove blood, but no better than water unless the blood had soaked into the wood. Shouldthink muriatic acid would then be a better solvent. The amount of blood is about one-fifth the weight of the body. I examined Dr. Webster's laboratory for the purpose of finding spots of blood, but only found it on the pants and slippers. The bricks were removed from the floor, but bore no indications of blood being spilled upon them. I think the perforation between the ribs of the trunk was not made with a knife, as by a stab. After blood has remained some 48 hours on a substance it assumes a dark brown color, and does not change. The spots I examined had that appearance. Can by the microscope distinguish human blood from that of some animals, but not many.

Catalogue (prepared by Prof. Jeffries Wyman) of the Fragments of Bones taken from the Ashes of the Furnace of Prof. J. W. Webster's Laboratory, at the Medical College, in Grove street, and first seen by me December 2, 1849 (Sunday); the list of fragments given at the Coroner's Inquest is subjoined in another order.

The present catalogue includes the parts enumerated, as well as others which were determined subsequently to the Inquest—names of the bones identified and characters by which they were determined—those about which a question existed are marked as doubtful. No. 1, frontal bone, outer angle of the orbit, left side—on this may be seen the outer portion of temporal ridge; part of the cavity of the orbit; supra orbital notch; part of the frontal sinus. No. 2, temporal bone, petrous portion of the left side; internal auditory foramen; jugular fossa; corotid canal; fenestra ovalis. No. 3, temporal bone; digastric fossa of the left side, with a portion of the additamentum; the squamous suture. No. 4, sphenoidal bone; base of the great wing of the right side; foramen rotundum; foramen ovale; sphenoidal sinus; vidian canal; suture. No. 5, temporal bone, mastoid process; mastoid cells. No. 6, parietal bones, two tables, vascular canals, glands of Pacchioni. No. 7, two fragments of the occipital bone—A, occipital protuberance; B, left lateral portion with lateral sinus, fragments of cranium not determined: some of them indicate fracture previous to burning. N.B.—A few of these were found during the second search of the ashes made at the Marshall's office. No. 8, left malar bone, edge of the orbit, edge of the temporal fossa, maxillary suture. No. 9, left upper jaw, antrum, suture, fitting that of No. 8, ridge. No. 10, one of the condyles of the lower jaw. No. 11, four fragments of the lower jaw—A, coronoid process; B, alveolar portion which succeeds to A, dental canal; C, portion succeeding to B, with alveolus and dental canal; D, symphisis—chin. No. 12, atlas, upper and lower articulations and arch of left side, tubercle for transverse ligament. No. 13, body of a cervical vertebra under surface, projecting from the slags. No. 14, fragments of a humerus—these are somewhat doubtful. No. 15, tip of olecranon, process of the ulna. No. 16, fragment of a radius or an ulna. No. 16, scaphoides of the left side. No. 17 A, trapezoides, side right or left—donbtful. (This was found on the second search.) No. 18, second phalanx of a finger, side—found on second search. No. 19, terminal phalanx of a finger, side. No. 20, fragment of a radius, right or left, doubtful. No. 21, fragment of the right tibia: tuberosity with spine on the right; canal for the nutritious artery to adjacent ridge, spine, articulation with fibula, lower articulation with fibula, lower articulating surface. No. 22, fibula, central portion. No. 23, right os calcis, nearly entire. No. 24, right astragulus, nearly entire. No. 25, tarsal bone, right cuboid (this adheres to No. 12). No. 25 A, tarsal bones. No. 26, metatarsal bone of the great toe—the ridge of the articulating surface indicates the right. No. 27, metatarsal bones, distal portions—one of the bones found on second search. No. 28, sesamoid bone. No. 29, terminal phalanx of the little toe, a part of middle phalanx adheres—second search. No. 30, middle phalanx of a toe. No. 31, phalanx of a toe—second search. No. 32, fragments of fingers and toes. No. 33, fragments of cylindrical bones. No. 34, fragments of bones of face. No. 35, fragments not determined. The fragments of bones enumerated in the preceding catalogue belong to the following regions of the body, viz.: cranium, face, neck, forearms, hands, right

leg below the knee, and feet. There are some fragments which were supposed to belong to the humerus; they correspond to that bone as to their angles and curves, but are not of sufficient size to render it certain that they are parts of a humerus. Besides the pieces of the cranium in the package marked No. 7 A, others are to be seen in the clay cemented with the fragments marked Nos. 13 and 21. Some of the pieces in No. 7 A did not present the appearance of having been fractured by the process of calcination, but by mechanical violence previous to the calcination. The fragments of the lower jaw are those of the right side and chin, and belong to a person from whom the teeth had disappeared between the coronoid process and the region of the first molar or second bicuspid. The alveoli have been absorbed and replaced by a flattened surface, with a ridge on one of its borders. This would indicate that many months had elapsed since the disappearance of the molar teeth. The bone of the right tibia is unequivocally that of the right side.

Dr. Oliver W. Holmes.—Am Parkman Professor in the Medical School of Harvard University, and Dean of the Faculty. Dr. Webster lectured four times a week to the medical students, on the subject of chemistry. His department was distinct from that of the other professors. He had no connection with the anatomical department. His lectures were delivered from 12 to 1—mine from 1 till 2. I saw the remains found at the College. They indicated anatomical knowledge on the part of the person who dissected them. My attention was drawn to the manner of the separation of the sternum from the ribs by Dr. Wyman, and I can only confirm the general statement that there was no botching about the business. I observed the effect of chemical agency on the flesh, and length of hair on the shoulders. I noticed nothing in the remains dissimilar to those of Dr. Parkman. A stab between the sixth and seventh ribs need not necessarily be followed by a great effusion of blood externally: it would depend on the direction of the wound. On the day of Mr. Parkman's disappearance, my lecture commenced at one. My lecture room is over Dr. Webster's, and I never was disturbed by a noise from the room below, chemical explosion or other. The rooms are very high. The seats of the students are raised above the main floor, but I stand upon it

Cross-examined.—In the Demonstrator's room, opposite Prof. Webster's lecture room, noise would be heard sooner than in my room above. Cannot say that I think the remains had been subjected to fire, but caustic had evidently been applied. A mortal blow on the head might be given without any effusion of blood following.

(To be continued.)

MISCELLANEOUS.

Freezing of Alcohol.—Until recently this liquid has resisted all attempts to freeze it. The *Comptes Rendus,* (the Paris Academy of Sciences) of January, gives an account of the experiment of Dr. Despretz, of Sorbonne, who, by the joint agency of solidified carbonic acid, liquified protoxide of nitrogen, ether, and a vacuum, reduced the temperature so low that the alcohol lost its fluidity, and the tube which enclosed it could be held horizontally for some minutes without the alcohol running out.

Action of Lime on Animal and Vegetable Substances.—It is generally believed that lime possesses a powerful tendency to corrode and destroy animal bodies, and that when placed in contact with it, they soon decompose and disappear. With this view it has been added to graves to promote rapid decay. Dr. John Davy has made a series of experiments upon the action of lime upon animal and vegetable substances, the results of which show that it not only does not promote their decomposition, but that it exercises a decided preventive and antiseptic power, and that putrefaction, when once commenced, is speedily arrested by this agent.

Cerebro-Spinal Meningitis.—This disease, which has been reigning epidemically among the garrisons of some French towns, has made terrible havoc at Logrono and Ribafrecha, in Spain. In the latter place full one-tenth of a population of 3000 souls were attacked, and twenty-two died. The natives call the affection clavo or sarmiento.

Adulteration of Opium.—It would appear, according to Landerer, that they sell in the East, under the name of opium, an extract of glaucium rubrum, an annual belonging to the Papaveraceæ. Almost all the opium sold in the bazaars of Smyrna, as well as the therica, or mithridate, which may be procured in these bazaars for a few paras, is prepared from this plant. A herbalist of Athens, who mistook it for a poppy, made an extract of it, partly by means of incisions carried into the stems, and partly by a decoction of the fresh plant, and sold it to various apothecaries as opium. This extract of glaucium exhaled a narcotic smell, and tasted as bitter as opium, so that it, in fact, bore a great resemblance to the bad Smyrna variety.

British American Journal.

MONTREAL, JUNE 1, 1850.

The Pretensions of the Montreal School of Medicine.—We regret much to learn that the Lecturers of this School are taking a step likely to become productive of serious injury to the French Canadian students of the Province, and destructive, if their application be granted by the Legislature, to the best and truest interests of the Profession. We have been given to understand that they are seeking from the Legislature the power of conferring diplomas, and that the holders of them shall not be reëxamined by the Provincial Medical Boards;—or, in other words, that they shall be endowed with the power of granting a document *equivalent to a license.*

A few years only have elapsed since we felt ourselves compelled to raise our voice against the pretensions of the same school, on those very grounds. The School sought this very privilege at the time that they obtained their Act of Incorporation. The former was denied; but the latter, and properly too, granted. Consequent upon the latter was the concession, on the part of the University of M'Gill College, of privileges to the School of the most important character: their tickets were recognised; and with the completion of one *annus medicus* in the University, the Students of the School were admitted to graduation, their examination being conducted by the Lecturers of the School, and in that language with which they were most familiar. This arrangement was mainly effected to remove the objection, urged against M'Gill College, by the French Canadians, that the Lectures of the University being delivered in the English language, the French Canadians were unable to derive full benefit from them, and were therefore debarred from the privilege of obtaining University honours. The arrangement thus entered into, and acted upon for the last three years, has now been openly violated by the School of Medicine itself. To the University, we apprehend, it is a matter of little consequence; but as regards the French Canadian students, who may be desirous of graduating in the Faculty of Medicine, it is one of extreme moment. If this privilege is now lost, except upon the completion of regular and prescribed *University* terms, the lectures at which are delivered in the *English* language, they will have but to thank their own countrymen, the Lecturers of the School of Medicine, who have sold, or desire to sell, their privilege, for a mess of pottage.

But this is a minor view of the question. It is fraught with consequences of the most serious character to the profession at large. Concede this privilege to the School of Medicine, and where are the subsequent concessions of the same privilege to be stopped? There would be no end to them; and a free

trade in diplomas would be originated, which would laugh to scorn free trade in a more literal sense of the term, and would become synonymous almost with manslaughter. Some may say, we write hyperbolically; but who will dare gainsay its truth? We appeal to the effects of this very system—the multiplication of licensing boards, in the United States,—and a few extracts from authenticated papers, will amply verify our statement.

Dr. F. Campbell Stewart, in his Address to the New York Medical and Surgical Society, Jan. 3rd, 1846, says:

"He had always advocated (quoting from a Medical Journal) a higher standard of medical attainment for graduating in medicine, and a sufficient preparatory education to place physicians on a par with other learned professions; but we have seen so much of the leveling system; so much pandering to popularity; such audacious promises on the part of medical schools to gull pupils; such pretensions to cheapness of board; such mock examinations for degrees; such drumming up of students; such underbidding in the price of tickets; in short, such artifices, and tricks, and manœuvres, for the sake of putting a few dollars in the pocket, that we have almost lost our early faith in the practicability of medical reform, at least to that extent to which it ought to be carried in order to accomplish the desired end."

"There is no school here whose certificate our army or navy examiners can take as a sufficient guarantee of the qualifications of candidates for admission, as medical officers, into either of these branches of the public service."

* * * * *

"A system then so invariably admitted to be defective must stand in need of amendment," &c.

And again—

"So long as they trust for reputation to the numbers rather than the character of their alumni, our country will be annually flooded with imperfectly and half-educated physicians, many of whom must, from absolute necessity, be forced to resort to means for gaining a livelihood calculated to degrade them in their own and in the public estimation, and to produce a ruinous influence on the profession."

So wrote Dr. Stewart, of New York, in 1846. In May, 1848, the Medical Association met in Baltimore; the Committee on Medical Education thus, among other matters, reported:—

"This Committee was instructed to report upon the subject of the two reports submitted at the last meeting of the Association, by the Committee, on the separation of teaching and licensing.

"The preamble and resolution, at the conclusion of the report, signed by a majority of that Committee, are as follow:—

"*Whereas* a general sentiment prevails in the medical profession that the active competition existing amongst the medical colleges of the Union has a tendency to lower the standard of professional requirement, and to depreciate the value of the degree;

"*And whereas* the facility, with which charters for medical corporations are obtained from our State Governments, exposes the medical profession to the continuance and increase of these abuses, inasmuch as the corporations possess alike the power of granting the license to practice;

"*Therefore resolved*,—That, in the opinion of this convention, some additional checks to the exercise of this right should be established by the great body of the medical profession." *

After an examination into the proportion of graduates in medicine to the relative populations of France and the United States, the report further states:

"From all these considerations, the inference is inevitable that our present ratio of supply of medical men is greater than is demanded by the exigencies of the people.

"Whence follows this result, *but from the facility with which the medical degree is obtained?*"†

But to demonstrate in the most incontrovertible manner the effects of this free trade in physic, upon the acquire-

* Transactions of the American Medical Convention, vol. 1, page 239.

† Op. Cit., page 243.

ments of medical graduates in the United States, let us take the authenticated records of the army and navy medical boards, exhibiting the proportion of those approved to those rejected for actual incompetency; and this we take to be the most effectual commentary upon the practice, the initiative of which has been taken by the Lecturers of the School of Medicine. From 1841 to 1845 inclusive—"presented themselves, 69; withdrew, a portion being physically disqualified, 18; examined, 51; approved, 17; vacancies happening within the year, 12." "From July 1846 to May 1849 inclusive:—invited, 381; presented, 201; physically or otherwise disqualified, 18; withdrew, 64; total, 82; examined, 119; approved, 38.* At the Navy Medical Board of the United States, from 1841 to 1849, inclusive, the following results are obtained—candidates presenting, 232; withdrew, from various causes, 57; examined, 175; approved, 77.† No stronger argument in our favour than these statistics could be adduced to demonstrate that the practice of the United States is detrimental to the interests of the profession there, and is the most certain method of securing ill-informed practitioners: not one,out of every three who graduated, were found worthy of being entrusted with the lives of the forces, army or naval, of the United States! And it is to a similar result here that the labours of the School of Medicine would inevitably tend. Are they men of greater virtue than those of the United States? Yet, see the results! Certainly, these results are not likely to be bettered in the hands of the School of Medicine, and most assuredly the lives of civilians are of equal value with those of the soldiers and sailors of the United States; and, if so, are equally worthy of being protected against the experiments of half-educated practitioners. No! Things are well as they are. The Montreal School of Medicine should learn, if it has not already done so, that their work is connected with the regeneration of the profession,—not its prostration; and that private schemes and private ends must succumb to the general good. We have now pictured the results of free trade in diplomas on the profession of the United States, drawn from authentic sources: we predict the same lamentable consequences on the profession of this country, if the application of the School of Medicine be granted. We shall wait to see what the action of the Legislature will be on the subject. Much, indeed, will the Lecturers of the School of Medicine have to answer for, if their application be granted. They will then have attained their own private ends, but, along with it, the ruin of their Profession, *as a Profession.*

* Transactions of the American Medical Association, vol. 2, p. 317.

† Op. Cit., page 320.

CENSUS OF THE CITY OF MONTREAL–1850.

(*Compiled for the Montreal Herald.*)

We publish below the Census of the City of Montreal, which has just been completed. The last Census was taken in 1844, at which period the whole population of the City was.....44,285
The Census just taken makes our population.....48,207

Increase.....3,922

The following is a Comparative Statement of the City of Montreal in the Years 1844 and 1850:—

	1844.	1850.
Natives of England....	3,161	2,666
" Ireland.....	9,595	10,007
" Scotland.....	2,712	2,383
" Canada(French)	19,041	21,300
" Canada (Brit.).	8,863	10,465
" Other Places ..	212	749
" United States..	701	637
	44,285	48,207

Return Shewing the Number of Inhabitants in the City of Montreal, 1850.

Wards.	Houses.		Heads of Families.	Native of							Total.
	Occupied.	Vacant.		England.	Scotland.	Ireland.	Canada, French.	Canada, British.	Germany or Holland.	United States.	Other Countries.	
East	326	53	299	140	89	282	963	390	4	11	18	1887
Centre	299	50	221	167	103	347	667	470	5	26	31	1816
West	362	43	269	194	193	559	370	557	10	50	178	2111
St. Ann's	747	213	1495	350	373	2840	1599	2107	30	147	9	7455
St. Antoine	1321	64	1319	518	502	1562	2984	1880	103	183	17	7749
St. Lawrence	995	60	1522	513	706	1626	2133	2251	99	138	72	7538
St. Lewis	1179	156	1176	240	137	893	4713	965	44	32	55	7079
St. James	1029	36	1652	326	146	1019	5961	1064	18	24	46	8604
St. Mary's	534	143	791	218	134	879	1910	781	4	26	6	3958
Total	6792	758	8674	2666	2383	10007	21300	10465	317	637	432	48207

	Members of family absent.
	39
	32
	22
	58
	219
	55
	56
	63
	102
	646

CENSUS OF THE CITY OF QUEBEC—1850.

	Total popul.	French Can.
Champlain Ward	4548	762
Palace "	2488	1178
St. Peter's "	3111	1095
St. Lewis "	2907	711
St. Roch's "	14472	12223
St. John's "	9972	6396
	27,500	22,375
Population of 1842	21,747	19,251

—*Quebec Gazette.*

On the 8th May, a Convocation was held at M'Gill College, when the Degree of Doctor of Medicine and Surgery was conferred upon the following gentlemen, Students of the University :—

Amos S. Bristol, on Amenorrhea.
George W. Sanderson, on Uterine Hemorrhage.
Enoch G. Dorland, on Pathological Changes in the Blood.
John A. Nellis, on Epilepsy
J. M. Van Norman, on the Repellant and Curative Powers of Nature.
R. M. Willson, on Venereal Affections.

And likewise on the following gentlemen, Students of the Montreal School of Medicine and Surgery :—

André Loupret, on Dropsy.
Olivier Raymond, on Cholera.
Charles Lemoine, on Diabetes.

The Convocation also bestowed the Honorary Degree of Doctor of Medicine on Joseph Morrin, Esq., Vice-President of the College of Physicians and Surgeons of Lower Canada, and President of the Quebec School of Medicine.

The Convocation also conferred the Honorary Degree of Doctor of Civil Law on the Rev. W. Agar Adamson, A.B., T.C.D., Assistant Minister of Christ Church, Montreal, and Chaplain to the Legislative Council of the Province.

Licentiates of the Medical Board, Canada West.

John Isaac Dallas, M.R. C.S.L.	Nov. 29, 1849
Saml. Blackwood, M.D.	Nov. 29, "
Hans Caulfield	Jan. 12, 1850
Abner Otis Kellogg	Jan. 12, "
Joshua M'Lean	Jan. 12, "
William Bell	Jan. 19, "
James M'Mahon	April 6, "
James Might	April 13, "
Robert Petch	April 13, "
John Orange Baker	April 13, "
Joseph Andrew Neilson, M.R.C.S.L.	May 11, "
Peter M'Kenzie	May 11, "
Daniel Wilson	May 11, "

Diseases of the Horse.—We publish to-day the first of a series of papers on the principal diseases of the Horse, by J. B. Turner, Esq., a gentleman who has had extensive experience on this subject, and who acted for a considerable length of time as veterinary sur-

geon to the 7th Hussars when they were stationed in this city. We entertain the opinion that these papers will prove of great value to the profession of this country in the treatment of niseases of their own horses, especially in places where the aid of an experienced veterinary surgeon cannot be obtained.

CORRESPONDENCE.

IMPROPER ASSUMPTION OF THE TITLE OF M. D.

To the Editor of the British American Journal.

SIR,—In the last number of your Journal I read with satisfaction the letter of *Legulus*, and fully concur with him in the absurdity of adding "Esq." after the names of Doctors of Medicine. But even that is hardly so bad as the actual assumption of titles by some medical men, who have no legal right to them.

I refer more particularly to the letters M.D., and the word Doctor. It is a notorious fact that the majority of the medical men in the Lower Province, who are only Provincial Licentiates, dub themselves Doctor; and a tolerable number add M.D. to their names, who possess no University honour. On referring to the Directory for 1849, I find, among the names of the Physicians and Surgeons, two with M.D. after them, who, I know positively, do not possess the degree: one should have D.D.S. after his name, if he wishes to specify particularly what he is a Doctor of. In Starke's Almanack again, no titles whatever are affixed to the names—a more preferable proceeding. And in a pamphlet containing a number of certificates upon the virtues of the *Aurora* or *Point du Jour* Mineral Waters, several medical men have the M. D. again affixed to their names, who have no more right to use that title than I have, who am but a simple Licentiate. I maintain that Licentiates and Members of the College of Physicians and Surgeons have no right, unless they have a regular degree, to assume the title of Doctor; properly they should be styled Mr. Fish or Mr. Bone, and for my own part I have never assumed the title of Doctor. Why should not the Licentiates affix the initial letters L. C. P. and S. after their names. The title is an honourable one, and one they need not be ashamed of.

In bringing this matter before the profession, I am actuated by the purest motives, and solely for its benefit. When so many quacks, together with arrogant and boasting individuals, assume titles they have no claim to, it is time we should put them down.

I would suggest that, for the future, a list of all those who assume such titles ought to be published in your Journal, and the column headed by a couple of *black sheep*, as adopted in the pages of the Lancet. I have trespassed upon your time and space, and wishing your Journal every success, which, from the independent and impartial manner in which it has always been conducted, it fully merits.

I remain, Sir,

L. C. P. & S.

Montreal, May 27, 1850.

OBITUARY NOTICES.

Death of M. Marjolin.—We have to record the death of M. Marjolin, one of the oldest, most respected, and talented surgeons of the French metropolis. His decease took place on the 4th of March, in the seventieth year of his age. This worthy member of our profession, and excellent man, was Professor of Surgery to the Faculty of Medicine, Honorary Chief Surgeon to the Hopital Beaujon, Member of the Academy of Medicine, and Officer of the Legion of Honour. He was accompanied to his final resting place by a large concourse of medical men and students, and deputations from all the hospitals and learned societies. Professor Roux, M. Dubois (d'Amiens), and M. Monod, severally pronounced discourses over the remains of their departed friend—the first, in the name of the Faculty; the second, as organ of the Academy of Medicine; and the third, as the representative of the Surgical Society. M. Marjolin had held his Professorship for the last 30 years, and was deservedly popular among his pupils. He was particularly successful both in surgical and medical practice, and was invariably consulted in difficult cases. His tastes, though possessor of very handsome property, were particularly simple, and he greatly delighted in rural pursuits. Like Meyer, of Berlin, and Jaegar, of Stuttgard, he exactly foretold his end, and calmly conversed with his son touching his decease, a few hours before he died.

At Munich, Dec. 29, M. Walther, Professor in the University of that city.

At Padua, Prof. Giacominb, one of the most disringuished medical writers of Italy.

Drowned, May 6, near Port Maitland, Lake Erie, Douglas Grantham, M.D., aged 30, Assistant Surgeon of the 23rd Royal Welsh Fusileers. The deplorable accident which has thus consigned Dr. Grantham to an untimely grave, occurred in consequence of a collision between the British steamer *Commerce* and American steamer *Despatch*, at night time, whereby 24 soldiers and 13 women and children met at the same time a watery grave. Dr. Grantham was in charge of a portion of the 23rd Regiment, which was *en route* to London, C. W., in the steamer, at the time of the accident.

At Port Dover, on Tuesday, May 28, Dr. Meek, at an advanced age.

Errata in Dr. R. P. Howard's communication in last number.—At page 4, 2nd column, 15th line from top, instead of "Scillæ tinct. oz. ij." read "Scillæ tinct. dr. ij."; and at 17th line, instead of "mist. camph. dr. iij." read "mist. camph. oz. iij." At page 5, 2nd col. 10th line from bottom, after "one" insert "an". At top of 2nd column, page 6, instead of "suegæ" read "senegæ." At p. 7, 1st col., 24th line from top, instead of "magnes. sulph." read "manganese sulph."; and at the end of the prescriptions of the 14th, 16th, and 31st Oct. and 16th Nov. instead of "&c." substitute "m."

BOOKS &c. RECEIVED.

Rudimentary Treatise on the Drainage and Sewage of Towns and Buildings, by G. D. Dempsey, C.E. London, 1849.

Transactions of the Medical Society of the State of New York during its Annual Session—held at Albany, Feb. 5, 1850.

An Historical Sketch of the State of Medicine in the American Colonies, from their first settlement to the period of the Revolution, by John B. Beck, M.D., &c, Albany, 1850.

Address delivered before the Class of the Baltimore College of Dental Surgery—Session 1849-50, by C. A. Harris, M.D., D.D, S. Baltimore, 1850.

METEOROLOGICAL REGISTER at MONTREAL, for the Month of APRIL, 1850.

Date.	Thermometer.				Barometer.				Wind.			Weather.		
	7 A. M.	3 P. M	10 P M.	Mean.	7 A.M	3 P.M	10 PM	Mean	7 A. M.	3 P.M,	10 P.M,	7 A.M.	3 P.M.	10 P.M.
1	+37	+54	+41	+45.5	29.91	29.97	29.87	29.92	S W	S W	S W	Fair	Fair	O'rc'st
2	" 40	" 48	" 41	" 44.-	29.90	29.86	29.78	29.85	W	W	S W	Fair	Clo'dy	O'rc'st
3	" 37	" 50	" 40	" 43.5	29.66	29.46	29.39	29.50	W S W	S W	S W	Fair	Fair	Clo'dy
4	" 36	" 37	" 35	" 36.5	29.29	29.26	29.41	29.32	N N E	E	N E	Rain	Stor'y	Clo'dy
5	" 28	" 38	" 29	" 33.-	29.57	29.63	29.62	29.61	N N E	N N E	N N E	Fair	Fair	Fair
6	" 27	" 40	" 32	" 33.5	29.64	29.59	29.54	29.59	N E b N	N E	N by E	Fair	Fair	Fair
7	" 30	" 52	" 42	" 41.-	29.60	29.51	29.49	29.53	N N W	N W	N W	Fair	Fair	Clo'dy
8	" 42	" 39	" 21	" 40.5	29.42	29.42	29.67	29.50	W S W	W by N	N N W	Fair	Sleet	Wndy
9	" 15	" 27	" 23	" 21.-	29.78	29.73	29.83	29.78	N W b W	N W b W	N W	Fair	Fair	Fair
10	" 19	" 35	" 27	" 27.-	29.90	29.82	29.84	29.85	N W	N W	N W	Fair	Fair	Fair
11	" 25	" 39	" 30	" 32.-	29.88	29.74	29.71	29.78	W by N	N	N	Fair	Fair	Fair
12	" 27	" 42	" 35	" 34.5	29.78	29.64	29.57	29.66	W S W	W by..	W by N	Fair	Fair	Fair
13	" 37	" 35	" 34	" 36.-	29.41	29.32	29.32	29 35	S S E	SE by S	S S E	O'rc'st	Snow	O'rc'st
14	" 28	" 34	" 29	" 31.-	29.30	29.27	29.44	29.34	W by N	W N W	N W	Snow	Wndy	Fair
15	" 22	" 32	" 24	" 27.-	29.60	29.64	29.70	29.65	W N W	W N W	W N W	Fair	Fair	Fair
16	" 20	" 31	" 25	" 25.5	29.77	29.79	29.91	29.82	W	W by N	N N W	Fair	Fair	O'rc'st
17	" 19	" 30	" 21	" 24.5	30.02	29.94	30.04	30.00	N W	N W	N W	Fair	O'rc'st	Fair
18	" 23	" 44	" 33	" 33.5	30.14	30.08	30.06	30.09	N W	S W b S	S W b S	Fair	Fair	Clo'dy
19	" 34	" 50	" 37	" 42.-	29.77	29.78	29.76	29.77	W S W	W S W	W	Fair	Fair	Fair
20	" 37	" 48	" 38	" 42.5	29.81	29.76	29.79	29.79	W	W	W N W	Fair	Fair	Fair
21	" 37	" 55	" 44	" 46.-	29.82	29.86	29.80	29.83	W N W	N N W	S W b S	Fair	Fair	Fair
22	" 42	" 46	" 45	" 44.-	29.69	29.46	29.35	29.50	S S E	S by W	W S W	Rain	Clo'dy	Clo'dy
23	" 45	" 48	" 36	" 46.5	29.46	29.48	29.74	29.56	S S W	S S W	S S W	Fair	Fair	Clo'dy
24	" 36	" 46	" 43	" 41.-	29.84	29.68	29.63	29.72	S W b S	S W b S	N W	Fair	Fair	Clo'dy
25	" 44	" 63	" 54	" 53.5	29.66	29.54	29.55	29.58	N W	W by S	W by S	Clo'dy	Fair	Fair
26	" 51	" 66	" 55	" 58.5	29.63	29.56	29.56	29.58	W by S	W	W	Fair	Fair	Fair
27	" 49	" 75	" 60	" 62.-	29.57	29.48	29.53	29.53	W	S	W N W	Fair	Fair	Clo'dy
28	" 42	" 55	" 49	" 48.5	29.78	29.72	29.51	29.67	N N E	N N E	N N E	Fair	Clo'dy	Rain
29	" 51	" 63	" 42	" 51.-	29.20	28.99	29.28	29.16	S S E	S by E	S S W	Rain	Rain	Clo'dy
30	" 44	" 57	" 48	" 50.5	29.57	29.66	29.45	29.56	S E	S W b S	S W b S	Fair	Fair	Clo'dy

Therm. { Maximum +66° on the 26th, at 3 P.M.
Minimum, +16° " 9th, at 7 A.M.
Mean of the Month, +39,8

Barom. { Maximum, 30,14 in, on the 18th, at 7 A.M.
Minimum, 28,99 " " 29th, at 3 P.M.
Mean of the Month, 29,646 inches

MONTHLY METEOROLOGICAL REGISTER, AT H. M. MAGNETICAL OBSERVATORY, TORONTO, C. W.—APRIL, 1850.

Latitude 43°. 39′.4 N. Longitude, 79°. 21′.5 W. Elevation above Lake Ontario, 108 feet.—(For the British American Medical and Physical Journal.

Day.	Barometer at Temp. of 32°				Temperature of the Air.				Tension of Vapour.				Humidity of the Air.				Wind.			Ins. of	Weather.
	7 A.M.	3 P.M.	10 P.M.	MEAN.	7 A.M.	3 P.M.	10 P.M.	MEAN.	7 A.M.	3 P.M.	10 P.M.	MEAN.	7 A.M.	3 P.M.	10 P.M.	MEAN.	7 A.M.	3 P.M.	10 P.M.	Rain.	
1	29.800	29 760	29.734	29.768	30.8	46.1	36.0	37.9	.138	.191	.186	.178	80	62	88	79	S E	E by S	E by N	—	Gen clear; a few lt clds dispersed
2	29.757	29 651	29 535	29.601	35 2	49 3	43.4	41.6	.188	.234	.217	.216	92	68	77	83	E N E	E by N	NE by N	Inaple.	Slt rain in mg; clouded till 3.
3	29.391	29 155	29 014	29 118	42.0	48.9	44.6	45.8	.215	.290	.265	.264	82	80	91	86	N N E	E N E	E N E	2 350	Constant rain all day.
4	28 864	29.001	29 247	29 091	41.9	45.6	37.0	40.9	.260	.272	.201	.236	99	90	92	92	E by N	W by N	N E	0 510	Slt rn till 8 pm; dnsly cld'd all dy
5	29 343	29 410	29.433	29.412	34.0	39.7	37.3	36.4	.180	.187	.180	.168	94	78	81	79	NE by N	E	NE by N	—	Gen clded; ft aur lt fr 9 pm to 1
6	29.503	29.494	29.506	29.486	34.9	42.1	36.8	38.3	.122	.173	.132	.151	60	65	60	65	N by E	S by W	N by W	—	Lt clds till 5; clear; brill aurora
7	29.547	29.457	—	42 0	49 3	—	—	—	.185	.184	—	—	71	73	—	—	NW by W	S S E	W	—	Lt clds disp; halo rd the ⊙ at 3
8	29.602	29 642	29.782	29.684	30.9	28.7	23.0	25.8	.132	.104	.078	.100	77	64	61	70	NW by W	NW by W	N W	—	Lt clds till 6; clear; ft aur 9 to 11
9	29.848	29 761	29.726	29.763	21.8	34.5	30 2	28.8	.057	.118	132	.113	47	59	78	70	W	S by E	S E by E	—	A few light clouds; hazy; fine
10	29.741	29 730	29.725	29.716	32.5	35.8	28.4	32.7	.139	.142	.126	.129	76	70	80	69	E	E by N	E N E	—	A few light clouds; hazy; fine
11	29.646	29 618	29 624	29.624	33.5	32 4	25.9	29 6	.105	.166	.135	.133	55	91	96	82	E by N	E	N	—	Clded till 7 pm; clear; snw 9 to 5
12	29 602	29.353	29 180	29.318	27.8	38 8	38.2	36.3	.146	.180	.204	.181	96	77	89	85	N by E	E	E	0 135	Mostly clded; rn fr 9 pm to 4 am
13	29.062	29.176	29.334	29.314	35 2	38.0	25.5	31.1	.160	.135	.098	.128	78	60	70	73	S W	W	W N W	—	Sn at 5 am; clded; h rd ⊙ 5 pm
14	29.452	29.562	—	28.1	32.2	—	—	—	.099	.117	—	—	63	65	—	—	W S W	W by N	W by S	—	Generally clouded
15	29.753	29.621	29.718	29 714	26.0	39.5	30.2	31.8	.107	.151	.145	123	74	64	86	68	W by N	S by W	N W	—	Gen clouded till 8 pm; clear
16	29.875	29 914	29.951	29 937	27.5	36.2	24.2	27.4	106	137	.085	102	70	64	64	67	W	N W	N N W	—	Gen clear; ft aur light at mnight
17	29.998	29 999	29 994	29 982	23.0	33.9	25.9	27.1	.062	.083	.092	084	52	47	64	57	N by E	N N W	N by W	—	Ft aur till 4 am: unclded; fine
18	30.078	29.965	29.880	29 932	27 9	35.7	31 2	39 6	.096	.144	.142	127	62	70	81	74	NE by N	E S E	E by S	—	Lt clouds and haze all day
19	29.760	29.660	29.740	29.706	33 2	49 3	34.7	40.0	.158	.178	.123	.157	83	51	60	64	N E	S E by S	N N W	—	A few lt clds; gen clear; fine
20	29.715	29.669	29 694	29.612	38 6	44.2	31.7	40.4	.129	.152	.140	.172	55	53	79	69	NE by N	E by S	E by S	—	Clded till noon; uncld but hazy
21	29.796	29.700	—	—	43.4	50.0	—	—	.260	.226	—	—	93	63	—	—	NE by N	E S E	E	0 700	Mostly clded; thunderstm mngt
22	29.323	29 197	29.352	29 320	44.4	56 7	50 7	50.3	.279	.380	.259	.307	96	83	71	83	E by S	S	W N W	0.075	Clded all day; distant thunder
23	29.569	29.736	29.912	29 779	39.3	38.3	30.0	35.0	.161	.131	.163	.138	67	57	97	69	W	S W by W	W N W	—	Lt clds till 5 pm; uncloudd
24	29.920	29.680	29.632	29.714	35 1	48.5	40.0	42.8	.134	.200	.174	.174	66	60	71	64	S W	S W by S	S W	—	Uncldd all day; hazy at 11
25	29.628	29.508	29.497	29 632	43.2	55.9	45 3	47.8	.217	.227	.169	.213	78	51	57	65	S W by S	S	S W by S	—	Generally clear; very fine
26	29.533	29.442	29.465	29 473	46.0	57 6	45.1	49.5	.231	304	.230	.253	75	66	77	73	Calm	S E by E	calm	—	Generally clear; very fine
27	29.487	29 409	29 550	29.332	47 5	59.2	47.2	53 1	.284	.369	.293	.332	88	75	91	85	E by S	S W by S	N by W	—	Mostly clear till 1 pm; clouded
28	29.638	29.434	—	—	42.5	44 2	—	—	.196	.232	—	—	73	81	—	—	E N E	E	E by N	0.760	Dnsly clded all day; const rain fr
29	28.905	29.270	29 518	29.318	47 8	48.2	37.6	43.7	230	195	.178	.206	97	58	79	73	S S W	W	calm	Inaple.	Clded till 6 am; clr fr 8pm (5 pm
30	28.631	29 352	29 292	29.451	42.7	52.6	58.0	49.2	.207	.243	.400	.265	76	62	85	75	W by N	E	W by N	0.190	Slt rn fr 6 to 8 am & fr 8 pm to mt
—																					3rd, Ice totally gone fr Tor Bay
No	29,586	29,542	29,578	29.5653	35 4	43.7	36 1	38 30	.167	.196	175	.179	76	66	78	74	5.43miles	10 90 mls	6.63miles	4 720	10th, Frogs heard first time

Highest Barometer,.....30.088 at 9 a.m. on 18th } Monthly
Lowest do. .....28.856 at 5 a.m. on 4th } Range, 1 232.
Highest obs. Temperature...65°7 at 1 p.m. on 27th } Monthly
Lowest do. do. ...18°0 at 6 a.m. on 9th } Range, 47.7.
Mean Max. Therm.....45.°86 } Mean Daily range,.....15.°90
Mean Min. do. .....29.°96 }
Greatest Daily range,.....26.°7 from 2 p.m. of 26th to 4 a.m. of 27th
Mean Temp. at 2 p.m.,.....44.°09 (warmest hour.)
Do. do. at 5 a.m.....32.°35 (coldest hour)

Diurnal Varition.....11°.74

Sum of the Atmospheric Currents in miles resolved into the four Cardinal directions.

North	West	South	East.
1673.1,	2288 9,	1046 1,	1780.9.

Mean velocity, 7 64 miles per hour.
Maximum velocity. 25.0 miles from noon to 1 p m; on 29th
Most Windy day, 14th: mean velocity per hour, 13.08 miles
Least do. 26th, do. do. 2,37 miles
Most Windy hour, 2 p.m., mean velocity, 10,94 miles per hour
Least do. 6 a m., do. 4,69 do. do.
Diurnal variation, 6,25 miles per hour.

Year	Temperature.				Rain.		Snow.	
	Mean	Max.	Min.	Range.	No. of days	Inches	Days.	Inches
1840..	42.70	68.7	22.8	45.9	14	3.420	2	..
1841..	39 40	61.8	19.9	41.9	3	1.370	3	..
1842..	43.40	69.8	20.1	49.7	8	3.740	2	..
1843..	41.20	71.6	14.7	56.9	7	3.185	3	0.1
1844..	48.11	74.6	14.9	59.7	10	1.615	1	Inaple
1845..	42.13	66.7	15.5	51.2	11	3.290	4	1.5
1846..	44 11	81.8	24.2	57.6	10	1.300	2	1.3
1847..	39.06	65.1	9.3	55.8	8	2.870	2	4.0
1848..	40.67	64.1	22.7	42.4	5	1.455	1	0.5
1849..	38.74	72 0	15.5	56.5	10	2.655	2	1.7
1850 ;	38.30	65.7	18.0	47.7	7	2.720	2	1.7