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THE

BRITISH AMERICAN JOURNAL

OF

MEDICAL & PHYSICAL SCIENCE.

VOL. V.

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MEDICAL AND PHYSICAL SCIENCE.

EDITED BY

ARCHIBALD HALL, M.D., L.R.C.S.E.,

Lecturer on Chemistry, University of McGill College; Member of the Medical Board of Examiners for the District of Montreal: one of the Physicians of the Montreal General Hospital: one of the Consulting Physicians to the University Lying-in-Hospital, &c. &c.

VOL. V.

MONTREAL:

PRINTED AND PUBLISHED BY JOHN C. BECKET, 211½ SAINT PAUL STREET.

1849—1850.

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VOL. V.] MAY, 1849. [No. 1.

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MONTREAL:

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Agents for the United States, Messrs. R. & G. S. Wood, 261 Pearl Street, New York.

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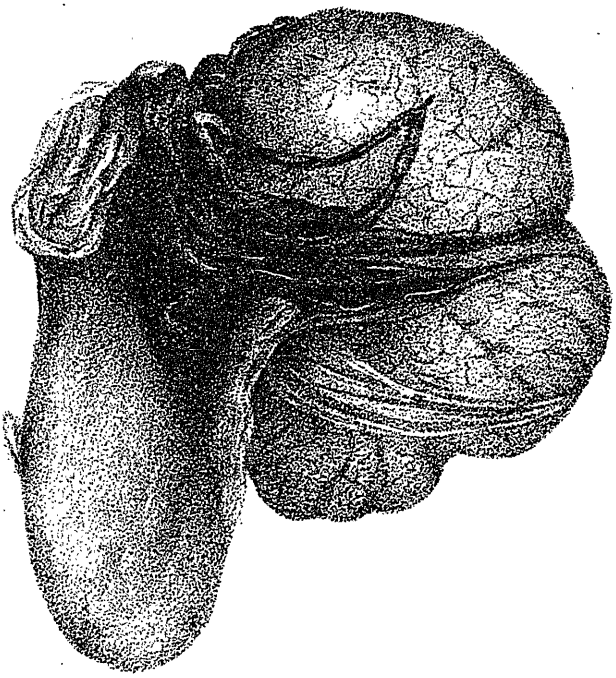

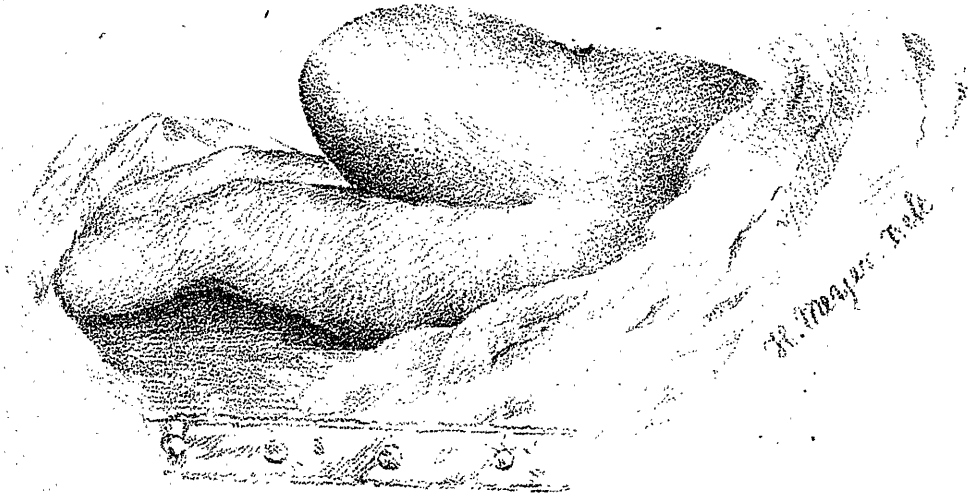

THE
BRITISH AMERICAN JOURNAL
OF
MEDICAL AND PHYSICAL SCIENCE.

[Vol. V.] MONTREAL, MAY, 1849. [No. 1.

Art. I.—CLINICAL REMARKS ON TWO CASES OF TUMOUR OF THE UTERUS COMPLICATING PARTURITION.

(*With Lithograph.*)

By James Bovell, M.D., King's College, Toronto, Junior Physician to the Lying-in Charity.

Gentlemen,—In accordance with the custom wisely observed in both the schools of Europe and America, the medical officers of this institution have determined on pursuing the system of clinical instruction. Your merely coming to this or any other abode for the sick, and casting hurried glances over the patients, and listening to a detail of symptoms by the nurse, can be of little, very little use, unless you possess the rare quality of intense application, and patiently investigate the opinions of authorities for yourselves, and carefully record all facts within your reach, at the termination of your career as pupils, there will be but a wearisome and painfully anxious future before you. While you have time, study closely the book of nature—sit quietly, patiently by the bed-side, and record the symptoms, appearances, and general history of the sick person, noticing every change and variation in cases.

I do not feel authorised to trespass any longer on your patience, or to occupy your time in a discussion of the advantages to be derived from clinical lectures, because this method of instruction has received the approbation and encouragement of the wisest and best of our medical teachers and professors; and I need only refer to the exertions of Professors King and O'Brien, of King's College, to establish a system of clinical instruction, to assure ourselves that the medical school of Toronto duly appreciates the value and importance of such a system.

The subject on which we intend making a few remarks this evening, is one of great importance, and has attracted much attention from modern physicians and pathologists, among whom I may particularize my late respected teachers, Dr. Ashwell, and his assistant, Dr. C. W. Lever, of Guy's Hospital. The subject of "Tumours obstructing parturition," has been very ably considered by the latter gentleman, who has divided his observations into two heads:—

1st. Tumours implicating the pelvis itself, or those organs and structures concerned in the birth of the child.

2d. Those tumours which belong to or implicate the parts in the neighbourhood of the birth passages. *Thus in his first division* he includes:—1. Tumours of the ovaries. 2. Tumours of the fallopian tubes. 3. Tumours of the rectum, tumours of the bladder. 4. Tumours in cellular tissue of pelvis, and 5, Those varieties of pe vic hernia which may and do occasionally offer an obstruction to the course of natural parturition.

In the second division we find:—

1st. Tumours of the bony pelvis and its ligaments.

2nd. Tumours of the uterus and vagina, with their subdivisions.

As it is not our province to enter into an examination of the question at large, we shall confine our observations to one of the subdivisions, and proceed to the consideration of tumours as they affect parturition, the pathology of hard tumours of the uterus, and, lastly, their effect on the walls of the uterus. It has been already observed, that one of the dangers peculiar to childbirth, is that the expulsion of the child may be hindered by the existence of tumours attached to some portion of the pelvis or its viscera.

The opposition which they give to the progress of labour, must, of course, depend a great deal on their size, density, and position, and in some degree, also, on their figure. If small, they may offer but little or no impediment, but if they be of a particular size, they may offer very serious obstruction to delivery, rendering it necessary either to diminish their bulk, or by a resort to instrumental delivery, effect the birth of the fœtus.

In forming our diagnosis in any case, we must, of course, be guided by the situation, size, shape, mobility of the tumours, and their consistence. Let it be borne in mind that the presence of a tumour in the pelvic regions does not necessarily imply that there will be difficulty in labour, or that, as a matter of consequence, instrumental aid must be given; in these cases, as in others of difficulty, the accoucheur should be guided by the same rules of propriety as influence his conduct in general. Dr. Beatty has published a case complicated with tumour, in which Cæsarian section was anticipated, but at the time of labour, it was elevated sufficiently to allow of the birth of the child, without any other assistance; and Dr. Churchill, "in cases where the tumour is too large and immoveable, says it has been found so far compressible, that after some delay and extra compression of the child's head, the labour has terminated naturally;" and Dr. Churchill further observes, "that the chances in favour of the tumour being elevated or pushed out of the way, are increased in proportion as it is high up in the pelvis."

In a case reported by Ingleby, the Cæsarian operation had been determined on by four practitioners, but persevering attempts to push up the tumour towards the posterior part of the right iliac fossa were at last successful, when the uterine efforts coming on violently, the head of the child came down, and occupied the place from which the tumour had been raised, and fresh contraction was followed by the birth of the child.

The difficulty occasioned by the size is augmented by the hindrance they offer to the adaptations of the head, and to its successive changes of position.—Dr. Lever

observes, "It is of great importance to ascertain the firmness and consistence of these tumours. In some cases fluctuation is so distinct, that no doubt can be ascertained of their nature; in other cases fluctuation may be so obscure, that we cannot actually determine their character without making an exploratory puncture. In short, he says, "I am of opinion, that in all tumours of this kind impeding labour, we are justified in assuring ourselves of the nature of the tumour before proceeding to perform the operation of embryotomy." Dr. Ashwell observes, "that if the opposing growth can be pushed above the brim of the pelvis, that the difficulty of parturition is at an end; but if it cannot be so raised, although puncture of the morbid structure is the best remedy for tumours with fluid contents, it will avail little in the management of solid and very hard growths." Dr. Merriman reports that in six cases the tumours were opened by him; *in three* the labour was left to nature to complete. Two of the women recovered, but the other remained for a long time in an ill state of health; two of the children were preserved. In the remaining three cases in which the tumours were opened, the use of the perforator was afterwards necessary: one of the women died; one remained in an ill state of health for eighteen months, and then sank, while the third recovered. Dr. Lever relates a case in which he found a "tumour as large as a fœtal head occupying so much of the pelvic cavity, that the finger could with difficulty be passed between the tumour and symphysis pubis, and on examining the rectum, the coccyx could not be passed. Her pains were very violent and frequent. Having guarded a common lancet, he made an opening in the tumour through the vagina, when upwards of a pint of an oily fluid immediately escaped, the sides of the tumour collapsed, the pains continued, the head rapidly advanced, and in two hours from the time of operating, she was delivered. Experience has, however, sufficiently proved that in many cases we are unable to evacuate the contents of the tumour, in consequence of its solid structure. Aware of this fact, and impressed with the conviction that in these cases danger did not arise so much from *injury to the uterus* as from inflammatory action subsequent to, *or of softening previous to labour in the tumour itself.* Dr. Ashwell proposed that we should induce premature labour. "It is almost superfluous," he remarks, "to observe that patients becoming pregnant in such a condition of the viscus, are exposed to the most imminent danger. The tumours *soften during the latter months;* the increased supply of blood leads to inflammation, unhealthy suppuration is established in them, and death occurs soon after parturition; (See 2nd case of Mrs. Bell,) to establish its propriety, he mentions:—

1st. That when death occurs, after a labour so complicated, the result is only slightly, if at all referrible to the uterus, which *rarely sustains any serious mischief,* but is mainly produced by inflammation, softening and unhealthy suppuration, in the growth itself; these pathological changes leading, in some instances, to rapid sinking, while in others the powers of the system having been less impaired, death ensues in a few days from the constitutional collapse, induced by the protraction and difficulty of parturition, and by the contusion and injury done to the tumour and other soft parts. He also elsewhere observes, "that in all the fatal instances of pregnancy, complicated with tumour, which I have seen, and where I have had the opportunity of examining the parts after death, *the uterus itself* has been healthy, or very nearly so; and in the majority of those recorded, this viscus is reported *to have been either in a natural state* or free from disease. In most of the fatal cases, the patient, after a good labour, not followed by any distressing uterine symptoms, or by any approach to collapse, suffered most severely from acute pain and enlargement of the tumour, accompanied by an anxiety of countenance, and a hardness and rapidity of pulse, indicative of alarming mischief, and ushering in a train of constitutional symptoms, almost, if not entirely referrible to the morbid growth." "I contend, therefore," observes Dr. Ashwell, "that the practice of inducing premature labour is peculiarly applicable to these cases, almost independently of any reference to the life of the child."

Having thus, I hope, clearly stated the amount of danger which has thus been shown to complicate parturition, I trust to be enabled to point out to you additional reasons for following Dr. Ashwell's practice, and to satisfy your minds that under such circumstances as those to which we are referring, that the operation of inducing premature labour, is urgently called for in consequence of *direct injury done to the uterus* by the pressure of the tumour against its walls.

Case 1.—*Tumour complicat ng delivery; rupture of uterus; fatal hæmorrhage.* Reported by Mr. A. Jukes.—Mrs. Proudlow, of full size and height, sanguine nervous temperament, prominent eyes, quick nervous expression, was admitted a patient of the Lying-in Charity, on the 25th of November, 1848, in the last month of her pregnancy:—

Head—well formed, is not subject to headache or any other cerebral affection.

Thorax—Well developed. Mammæ—small and rounded; good nipples; heart's action regular and tranquil, although on first speaking to her, palpitation is easily induced with concomitant nervousness. Abdomen—on examination externally, its size is observed to be considerably increased, being much larger than even the majority of twin cases. It is pendulous, overhanging, and projecting considerably beyond and below the symphisis pubis; its shape more pointed than in cases of ordinary pregnancy. On placing the hand on the abdomen, a dense hard rounded body is distinctly felt occupying the place of the gravid uterus, but giving a nodulated feel to the hand; it is divided into portions by a deep sulcus or groove running obliquely across the tumour; no fluctuation, but extreme dullness on percussion; neither placental murmur, nor fœtal heart heard over this structure; towards the last hypogastric region, a second globular body presenting a smooth surface, and much less dense, is found. On applying the stethoscope, the placental murmur was heard in the left iliac region—not very distinctly; no internal examination can be obtained, although she is very certain that she feels *the motion of the fœtus* in this second

body. She states that her last pregnancy terminated nearly two years ago, and at that time a tumour existed about the size of the clenched hand, situated in the front and lower part of the bowels, and that the labour was perfectly natural, and ended safely. She has lately suffered much anguish of mind, and undergone great privations, and received brutal treatment from an unprincipled husband, having been more than once kicked into the streets in nothing but her night-dress, and in the depth of winter. Her general health appears now to be pretty good, her digestive organs acting well; and she does not suffer from any affection of the kidneys or bladder.

On Sunday evening, at 6 o'clock, p.m., December 17, Mrs. Proudlow was taken in labour, the liquor amnii escaping at the second pain. At a quarter to 7 o'clock, p.m., Dr. Bovell arrived, and found that the second stage of labour had fully commenced; the anterior fontanelle presented, and the sagittal suture ran towards the pubis; the pains were very short, but effective, the pelvis being a roomy one. At half past 7 o'clock, (Dr. Hodder being also now present,) the head descended to the perineum, and the orbital ridge was felt just emerging from the symphysis pubis, and in a short time the face presented at the os externum. With a view of ensuring the contraction of the uterus, and as there was plenty of room, a dose of ergot was administered; the pains seemed affected by it, and the head was protruded into the world without much distention of the perineum. From this time there was an entire cessation of labour-pains, and a second dose of ergot entirely failed in its effects. The child being dead, no attempt was made for about twenty minutes to deliver the body which had not made the usual turn, but lay in the transverse diameter of the outlet. She at this time was irritable, requesting us not to trouble her; but it having been noticed that her face was bathed in cold sweat, the fingers of the left hand were introduced flat on the shoulder of the child, with a view to turn it in the antero-posterior diameter of the outlet; in this we failed. The finger was then passed under the axilla, and the arm brought down. At this time the uterus contracted as by a violent effort, sending the fœtus and placenta into the world. A loud gurgling sound was instantly heard, and an immense gush of blood followed. (As near as we can judge, 40 minutes had elapsed between the birth of the head, and the expulsion of the body). Mr. Jukes, who had charge of the woman, as senior pupil, instantly applied pressure, using the tumour for the purpose, and by rolling it on its axis, hoped to induce contraction, and stay the flooding. Immediately on the first gush of hæmorrhage, Dr. Bovell introduced his hand into the uterus, for the purpose of inducing contraction. The os, as he stated, was uncommonly flabby and open, and did not appear to be at all sensible of the stimulus of the fingers. No bleeding appeared externally after the first gush for some little time.

The woman continued to sink rapidly, and died in about half an hour. The use of hot turpentine fomentations to the heart and extremities, and ether poured over the naked abdomen, with the use of iced cloths in the vagina, and to the vulva, and the internal administration of stimulants all failed.

Post Mortem—On the following noon an examination of the body took place, in the presence of the Consulting Physician, Professor Herrick, the senior accoucheur, Dr. Hodder, Rev. H. J. Grasett, M.A., and the pupils attending the Institution. The abdominal walls being laid open, and reflected back, so as to give a view of the position of the interior, showed a large nodulated tumour covered by a dense smooth membrane, occupying the front of the cavity of the abdomen, concealing most of the intestinal canal and lower lobe of the liver; the fundus of the uterus projected, or appeared rather at the upper border of the mass; the bladder was empty, and in no way implicated with the tumour; on raising the tumour from its site the whole posterior part of the cavity of the abdomen was seen filled with coagulated blood. By a careful dissection, the uterus, vagina, and bladder, were removed. It was now observed that the uterus was very imperfectly contracted, and that in the anterior portion of the neck, a ragged, broken rent existed, passing down to the very edge of the os, but not tearing it through. Just above this, and springing immediately from the body of the uterus, we found the peduncle of the tumour about the size of a fœtal wrist; this, on being examined, was seen to consist of cellular tissue, strengthened, apparently, by elongation into it. Of the fibrous structure of the uterus, a large venous trunk passed along into the very centre of the mass, terminating in a large *cavity* about the size of a walnut, from which other smaller vessels appeared to branch off for the supply of the diseased structure; the main trunk feeding the tumour was tracked back on to the walls of the uterus, on the surface of which it lay, sending a large branch up towards the right ovary, and continuing to give off branches until these were lost in the softened and broken-down structure, and loose cellular tissue of the neck of the womb. The tumour (larger than an adult head) on its exterior surface was covered by a capsule of reflected peritoneum, which dipped down among the sulci, as with brain. In one portion the process of softening had commenced, but generally its structure was very firm and dense; sections of it exhibited numerous bands intersecting it in various directions. The ovaries were healthy. On opening the uterus, the place of attachment of the placenta was seen, but it did not appear that any vessels were open, and in two small ones their situation was shown by small coagula. The structure of the uterus was firm and healthy in its posterior aspect in the fundus and body. Anteriorly, it had become much thinned, exceedingly friable, and easily broken down; indeed, it is difficult to say whether any other structure than loose cellular tissue formed the anterior portion of the neck of the uterus. There was no opening from the vagina into the cavity of the peritoneum, but there was free communication between the uterus and it, so that any obstacle to the exit of blood from the os uteri to the vagina, would have turned it through the opening of the neck of the uterus into the abdomen. A reference to the drawing taken immediately after dissection by the talented artist, Mr. Hossner Meyer, and

lithographed by Messrs. Scobie and Balfour, gives a correct description of the parts—the connection of the tumour with the uterus is shown, and the dark shade exhibits the effusion of blood into the broken-down tissue of the neck of the uterus.

REMARKS.

This, gentlemen, is the history of the case as reported by Mr. Jukes, whose assiduity and gentleness of manner towards the patients is only equalled by his coolness and ability. The first point to which we wish to direct your attention is the character of the tumour. Any one who will take the trouble to make a careful examination of the preparation must at once perceive that the large tuberculated or lobulated hard mass forming the tumour, springs by a foot stalk from the anterior portion of the neck of the uterus, just as it joins the body of the viscus, and that as it has grown it has carried before it the reflected peritoneum which covers it precisely in the same manner as the tunica vaginalis covers the testis. The footstalk or peduncle appears to consist principally of very large vessels surrounded by elongated fibres from the neck of the uterus. One of the vessels entering the peduncle was divided and proved to be a vein of a size sufficient to admit the little finger. This vein was subsequently traced along the anterior portion of the body of the uterus of a size scarcely inferior to the cava; it sent off several branches, several of which entered and were lost in the broken down tissue of the neck. The peritoneum reflected over the whole tumour formed a covering of some density, and certainly appeared to dip down into the tumour, thus entering into its composition; its structure was dense and hard generally, and was divided into two pretty nearly equal halves, by a sulcus or groove, the serous covering passing down the groove very perceptibly: one portion of the tumour was observed to have commenced to undergo the process of softening. On cutting into the substance of the tumour its lobulated structure was rendered more apparent, and exhibited that cystiform arrangement peculiar to these heterologue deposits, and intersected by numerous bands or striæ. In my own mind the malignant nature of these growths is so clearly established that I cannot admit their connection with the polypi, or assent to their being placed in the same catalogue with the analogue formations. I do not, however, desire to be understood as adopting in toto the opinions propounded by Dr. Hodgkin, but on the contrary receive the views entertained by Dr. Ashwell, and look on them as constituting the link which binds the analogue and heterologue deposits. Dr. Hodgkin observes, "that the name fibrous tumours of the uterus is inaccurate and fallacious, and the appellation is to be regretted, because it has favoured the belief that these productions are sui generis and altogether distinct from that of tumours of undoubted malignancy. These growths essentially possess the structure of compound adventitious cysts, to which the malignant heterologue formations are to be referred. The appearance of fibres which these tumours present, when a section has been made through them, is produced by the cut edges of the cysts, of which these tumours are composed. If any doubt of the existence of this structure remain after the incised surface has been carefully compared with the corresponding surface of other tumours unquestionably possessing this structure, and belonging to the malignant class, it may be removed by an examination of the external surface of a tumour when carefully detached from the substance in which it is imbedded. We may then perceive not only the *nodulous* form, but even the portions of the cysts; although the intimate mutual adhesion of the subordinate parts, and the density and compactness of the structure which they constitute, are unfavourable to their complete dissection."

"Although," he continues, "we do occasionally meet with adventitious productions developed in the uterus, differing in character from the ordinary scirrhus tuberchy of that organ—as for example that form which has been called gum-cancer gelatinous, areola cancer, and the fungoid tumour—nevertheless the predominance of one form, and the peculiarities which may frequently, if not always, be observed in those rare instances in which the other tumours before mentioned occur, evince the intimate relation which exist between the character of adventitious growths, *and the texture in which they are produced*—and I think that Dr. Hodgkin accounts for the structural peculiarity of these tumours in another portion of his work very satisfactorily, where he says:—"It seems pretty evident, that in the disturbed, if not in the healthy process of nutrition, a new product, whatever may be its character, *is influenced* by the nature of the surrounding parts; and to illustrate this opinion, Dr. Hodgkin refers to the case in which masses of bony matter deposited in the condensed cellular structure, resulting from a chronic ulcer situated over bone. In several instances of chronic ulcer occurring in cases operated on in the Barbadoes General Hospital, we found the base of the ulcer of cartilaginous toughness, and earthy matter deposited throughout; in many points of the ulcer the deposition seemed to have formed itself into little circular and radiating bodies, very much indeed resembling the drawing of an haversian canal, with its concentric lamellæ, purkinjeau corpuscles, and converging tubuli. I shall now proceed to shew you, on the same authority, that fibrous tumours of the uterus owe their distinctive character to the peculiar structure of the organ. He says:—"There is one form of tumor to which the term of scirrhus is applied, which differs so considerably from some of those which I have been describing, that I must not pass it over unnoticed. I allude to the scirrhus tubercle developed in the uterus. They possess a well-rounded defined figure, and a close, compact tissue, in which the structure, referrible to the same type as the cysts to which I have so often alluded, is tolerably distinct, on a much larger scale than that generally observable in true scirrhus tumours in other parts of the system. They never or at most very seldom pass into the stage of softening or ulceration; and when formed in the uterus without any other organ having exhibited a tendency to the production of scirrhus, the formation almost wholly continues to be confined to this organ, consequently they do not appear to be accompanied by constitutional taint. On the other hand, their occasional formation in conjunction with primary scirrhus and cancerous affection of the mammæ and other parts, necessarily connects them with

malignant disease. They rarely if ever present any cells or cavities. They acquire a much larger size than true scirrhus in other parts of the body. Although these tumours or tubercles are littleliable to the process of softening, their formation disposes them, in common with other growths of the same family, to a diminution or loss of their vitality. It would seem, however, that this takes place very gradually, and is accompanied by deposition of earthy matter; so that by the time the nutrient vessels are nearly or quite obliterated, the scirrhus is converted into a bony structure little susceptible of change, and which may consequently be retained to an almost indefinite period in the system, without material injury to the organ in whose substance it is imbedded. The peculiarities belonging to scirrhus tubercles of the uterus are, doubtless, in a great measure referrible to the part in which they are developed. Their enlargement meets with no violent or partial obstructions; but at the same time, is subjected to a steady, moderate, and uniform pressure, which in all cases tends materially to diminish the relative proportion of the fluid parts, and to which in the instance before us, we may attribute the absence of cells, and the firm and compact structure of the tumours. An examination of the tumour removed from Mrs. Proudlow will, I think, clearly show that in the formation of the peduncle a peculiar extension or prolongation of the structure of the uterus exists, and is gradually lost in the hard, dense substance of the tumour. Dr. Ashwell's definition is, that—" These tumours are always either of fibrous, cartilaginous, or calcareous hardness, varying in size from a pea or a small nut to the volume of a pregnant uterus of the later months. They exert only a slight influence on the constitution, and frequently exist almost unnoticed, till by their magnitude they press upon the neighbouring structures, mechanically interfering with their functions; inflammation and its consequences may then ensue. *Their malignancy is denied by many*, but there is probably sufficient evidence of their belonging to the scirrhus variety of carcinoma. He gives two examples which deserve to be distinguished:—

1st. Tumours, whatever be their size and induration, growing externally, and by projecting the peritoneal coat of the uterus, obtaining from it an external covering.

2nd. Tumours often, although not constantly of moderate induration and bulk, which by growing internally carry before them, and are thus invested by the mucous membrane, leaving the uterine cavity, and hence obtain the name of submucous tumours. It need scarcely be remarked that they are accompanied by an entirely different class of symptoms.

By whatever name designated, whether fibrous, hard or scirrhus tumour, Dr. Ashwell thinks that there is evidence to show that they ought to be regarded as malignant, because—

1. They possess the structure of compound and adventitious cysts, the basis of this class of heterologue formations.

2. In the colour of the contained mass, and in the arrangement of the membranous septa or bands, the containing tissue; they are identical with scirrhus.

3. In hardnsss occasionally justifying the application of the term stone cancer, they are not to be distinguished from the varieties of carcinoma already mentioned.

4. They occur very frequently, with growths of undoubted malignancy in other parts of the uterus.

5. They possess one efficient attribute of malignancy, incurability.

Dr. Ashwell in another portion of his treatise observes, " That it has been assumed, and on distinguished authority, that they not unfrequently become uterine polypi, and simply by descent and the consequent formation of a stalk. That one of these hard fibrous tumours may very rarely find its way into the uterine cavity is allowed, and that prior to the patient's life or her powers being destroyed by the bleedings, which in this situation the tumour may occasion, the growth may as a most unusual occurrence, descend to the lowest part of the uterine cavity, distend and pass through the cervex, and ultimately find its way into the vagina, is conceded; but it will be a hard or fibrous tumour still. An inspection of preparations of such morbid growths how much more distinct generally in the tumour than in the polypus is the induration of texture, and certainly the white membranous lines are much more defined and striking in the former than in polypus. Thus while it is somewhat rare, except in old, large and condensed polypi, to find this indurated and linear structure a genuine, hard or fibrous tumour, except when breaking down, is never without it. In the number of the growths there is a dissimilarity, many being not uncommon in the case of tumour, while it is rare to find more than *one* polypus, because not malignant does not affect the organization of the surrounding parts; the muscular walls of the uterus being rarely thickened by polypus, however large may be the polypus. The hard tumour may, and often does, convert by degrees the uterus in its vicinity into its own diseased structure. Madame Boivin gives a case in which abortion took place in the sixth week; the abdomen afterwards swelled, and a tumour which must have existed previously was felt. A second pregnancy took place, and the patient died in her fourth month of pregnancy. On examination an enormous tumour in the abdomen, fibrous exteriorly and internally, of a pale reddish colour, lardaceous and encephaloid, was taken out. Professor Andral, a host in himself, is amongst those who deny the malignancy of fibrous tumour, but on the other hand he is careful not to confound them with polypi. He says:—" Fibrous tumours present the same structure in the uterus as in other parts of the body. They are composed of fibres rolled up and matted together; these bundles of fibres are divided into several lobules separated from each other by loose cellular tissue, in which the blood vessels run. With respect to situation they may be divided into three classes—to the first belongs those situated outside the uterus, between it and its peritoneal covering. These never grow at the side next the uterus, and consequently compress it but slightly, *all their increase of bulk being in the direction of the abdomen.*

(To be Continued.)

Art. II.—INTRA VAGINAL RESPIRATION RECOMMENDED IN SOME CASES OF PARTURITION WHERE THE CHILD'S LIFE IS IN DANGER FROM PRESSURE ON THE CORD.

By M. M'Culloch, M. D.,
Lecturer on Midwifery and Diseases of Women and Children, University of M'Gill College.

I beg, through the medium of the *British American Journal,* to make known a new mode of practice by which the amount of infant mortality will be lessened in many cases in which death from pressure on the cord is otherwise inevitable. If we take the average of French, German, and British practice, we find by the most authentic statistics that danger to the life of the child from this cause occurs in breech presentations once in 53 labors; in presentations of the superior extremities, after turning, once in 261, and where the cord presents once in 245 cases. Thus we have in 649 labors 12 presentations of the breech, 7 of the inferior extremities, 2½ of the superior extremities, and 2½ of the cord, occasioning a loss of life at birth of about two per cent. of all children born. This great mortality I think I have succeeded in diminishing in my own practice in three footling cases within the last eight months, by enabling the child to breathe while the head was still within the cavity of the pelvis after the pulsation in the cord had been several minutes extinct. And this novel state of existence was maintained by keeping the child's mouth open with my finger, and the perineum expanded to allow air to have free access into the vagina. In future I shall endeavour to accomplish this object with greater certainty by introducing into the mouth the end of the largest sized gum elastic male catheter, with several perforations in it, and continue as before to allow as much air as possible to approach the face and nostrils. In all cases of malposition in which the practice I have suggested becomes desirable, the chance of respiration being established will be greater if the means are used before the circulation becomes feeble in the umbilical vessels; and if the child is born alive in the absence of pulsation in them, it may be fairly conceded that we have been successful in our efforts to preserve life. Some cases may occur where a small sized male catheter with a suitable curve, might be used with advantage as a tracheal pipe. I need scarcely add that the infant's body should be kept warm, gentle traction employed, and all the other ordinary means of exciting contraction of the uterus used until the delivery is completed.

If the practice I have here recommended is found to answer in other hands as it has in my own, something will have been achieved in obstetric science, in circumstances where the most skillful have hitherto frequently had to lament their inability to save the child's life.

Montreal, April 20, 1849.

Art. III.—ON THE OPERATION OF PHYSICAL AGENCIES IN THE FUNCTIONS OF ORGANIZED BODIES, WITH SUGGESTIONS AS TO THE NATURE OF CHOLERA.

By Dr. G. Russell, Montreal.

(*Continued from page* 326, *vol. IV.*)

From the consideration of certain facts, to some of which I have already alluded, we are forced to the conclusion, that the simple physical power of capillary attraction is the cause of the passage of fluids through the smaller vessels and capillary tissues of the human body. I am disposed to think that too much power has been ascribed to the action of the heart, even in the general circulation of the blood. The idea has not originated with me, that the heart should be considered as a balancer, or an equalizer, between the arterial and venous systems, rather than a propeller of the sanguiferous current. Be this as it may, we know that sap is raised to the tops of the highest trees, without any *vis a tergo* in their roots.* We know that in the living sponge water is constantly entering the smaller orifices, passing through channels and tubes, and ejected, with considerable force, from larger openings, without the least appearance of mechanical force. We know that in cold-blooded animals without hearts, the circulation of the blood is maintained. After some kinds of natural death in man, the arteries are emptied of their contents,—and sometimes urine has been poured out by the ureters, sweat by the skin, and other secretions have been discharged by their appropriate glands, long after the action of the heart has ceased.

That capillary attraction in vegetable and animal tissues, under certain conditions, is very powerful there can be no doubt. "In the month of April," says Doctor Draper, "I cut a vine which was growing wild, on the edge of a forest in Virginia, asunder, with one blow of an axe; the cut surface, which was about one inch and a half in diameter, exhibited its open vessels, from which there poured out an uninterrupted stream of ascending sap. In the course of eight hours, there was collected of this fluid seventy ounces, and this is probably a far less quantity than would have been raised under circumstances where the leaves aided the spongioles, by their exhausting action."

There is such consentaneous action amongst the imponderable elements, that philosophers have long suspected that they are but modifications of the same energetic, all-pervading principle. Thus, by electric capillary attraction, sap is raised to the branches and leaves of trees, while light is performing an exhausting chemical process upon their surfaces,—"heat is also set free, and becomes latent in the various transmutations which take place, so that plants, like animals, have a temperature of their own, independent of external circumstances."

Mrs. Somerville in her physical geography says:—"The quantity of electricity requisite to resolve a grain of water into its oxygen and hydrogen, is equal to the quantity of atmospheric electricity which is active in a very powerful thunderstorm; hence some idea may be formed of the intense energy exerted by the vegetable creation, in the decomposition of the vast mass of water and other matters necessary for its sustenance; but there must be a compensation in the consolidation of the vegetable food,—otherwise a tremendous quantity would be in perpetual activity. *There is reason to believe that electricity, excited by the power of solar light, constitutes the chemical vitality of vegetables.*"

If the experiments to which I have before referred can be relied upon, the inference which I have here placed in italics, in my opinion, has been fairly demonstrated.

The quantity of electricity condensed in ordinary substances must be very great. The steam issuing from the valve of an insulated locomotive steam-engine produces seven times the quantity of electricity that an electrifying machine would do, with a plate three feet in diameter, and worked at the rate of 70 revolutions in a minute,—in short, it may be stated generally, that any thing which tends to destroy the molecular attraction of bodies, such as friction, pressure, heat, fracture, chemical action, &c., developes electricity.

Dr. Golding Bird, in a work lately published on Natural Philosophy, says:—"It is now an incontrovertable fact, that no physical change can possibly occur, without a disturbance of electric equilibrium, *and many processes of this character are going on in the human body.*"

We have one striking example of the power that electricity exercises over the circulation in man, in the fact, that capillary action continues for some time after death: unless the person has been killed by a *stroke of lightning*, or a severe blow upon the epigastrium. I am disposed to consider the great sympathetic, as a receptacle for the electricity required for the organic functions of the system; something analogous to a Leyden jar, always charged, in order to regulate the supply of electricity to the several parts of the body, as it is required. Does not this account for the derangement of the functions of the abdominal viscera, consequent upon intense excitement of the brain, which exhausts the reservoir, leaving the viscera without their natural stimulus?

The superhuman genius of Shakspeare seems to have appreciated the true philosophy of future, as well as of all past ages of the world's history:

> "I could a tale unfold, whose lightest word,
> Would harrow up thy soul; *freeze thy young blood;*
> And make
> *Each individual hair to stand on end,*
> *Like quills upon the fretted porcupine.*"

Upon this principle, it will readily be understood why fear is one of the most powerful auxiliaries to cholera, by reducing the *contractility* of the visceral tissues, which, I have the authority of Carpenter for saying, is *purely a physical property.*

Is not one of the uses of the hair, by their sharp points, to carry off the superabundant electricity of the brain under excitement?

There may have been more philosophy in "Perkin's steel tractors" than what was generally ascribed to them.

Does it not also account for the arrest of the secretions, &c., after death, by a blow upon the epigastrium, when we suppose that the *jar* has been suddenly discharged by the concussion of the solar plexus. I advance this idea with diffidence, for the consideration of the profession, many of whom have superior opportunities for testing its soundness.

Supposing some animal was killed by means, such as would derange the nervous apparatus as little as possible; then, by suddenly crushing the similunar ganglion, it would be seen what effect it would have upon the capillary action that would still be going on.

In summing up the evidence which I have already adduced, I think the conclusion is inevitable, that electricity is the grand cause of capillary currents in the physical, the vegetable, and the animal worlds.

According to the most approved philosophy of the present day, the earth may be considered a huge loadstone, with currents of electricity traversing its substance; as well as the atmosphere by which it is surrounded. These currents are excited by the thermal action of the sun upon the different substances of which the globe is composed. By the recent experiments of Mr. Fox, in the Cornish mines, such currents have been proved to exist in the crust of the earth; that their direction is *from east to west;* and, that they are greatly influenced by the nature of the soil through which they pass, as well as by astronomical and geological causes beyond our research.

I am proud to observe that that real queen of women, Mary Somerville, maintains the theory of a single fluid. She says:—"There can be no doubt, that all the phenomena of magnetism, like those of electricity, may be explained on the hypothesis of one etherial fluid: *a theory which accords best with the simplicity and general nature of the laws of creation.*" Professor Faraday has clearly proved, that statical, dynamical, thermal and animal electricities, as well as magnetism, are *identical*; and that the difference in their quantities, and intensities, are quite sufficient to account for what were considered their separate qualities.

My own idea of magnetism is very simple; I believe that every magnetised body, whether it has been made so naturally or artificially, has the property of receiving at one end, and discharging from the other, a constant stream of electricity. I may be mistaken, but it appears to me that the "double theory" has prevented philosophers from arriving at truth in this matter.

There can be no doubt, however, that the magnetism of the earth is produced by the electric currents which are in circulation through its crust, and around its surface. In connection with this it may be stated that the magnetic poles of the earth are constantly changing their position. Previous to the year 1660, it was observed, that the needle pointed east of north. Since that time it verged to the west, as far as 24°, 30'. In the year 1818 it again turned, and it is now retrograding towards the north, at the rate of ten minutes *per annum.* It has also an annual, as well as a diurnal variation; the extent of which, taking one period with another, does not appear to be definite. These pendulous motions of the poles must depend upon causes, which are out of the scope of our investigation; nevertheless, they indicate that there must be great variations in the quantity and intensity of the electricity of the earth at different periods, and in different places, according to the position which the earth holds in relation to the sun at particular times. This is also proved to be the case by the most positive evidence.

Fourthly, I will now endeavour to trace out that chain of evidence by which I conceive Cholera to be dependent upon a deficiency of electricity in the locality where it prevails.

I think it will be generally admitted, that it would be hard to find a question upon which medical men have differed so much, as the contageousness or non-contageousness of Cholera. No doubt many facts have been adduced by the advocates of the former, in defence of

their position; still the eccentric character of this disease has compelled them to adopt ground on which it would be difficult to distinguish them from their opponents. Dr. Holland, a Contagionist, says:—

"If a virus can be transmitted from the body through a few feet of air, we are not entitled, from the partial experiments hitherto made, to set *any limits to the extent* to which, under favorable circumstances, it may be conveyed through the same, or other medium. Common reason here concurs with our actual experience of the transmission of the virus in certain diseases, in various ways and to remote distances."

The opinions of the non-contagionists may be summed up in the suppositions of Dr. Davy, an able practitioner, who was in Ceylon when the disease was raging there. He says:—

"The cause of the disease is not any *sensible* change in the atmosphere, yet, considering the progress of the disease, its epidemic nature, the immense extent of country it has spread over, we can hardly refuse to acknowledge, that its cause though imperceptible, though yet unknown, does exist in the atmosphere. *It may be extricated from the bowels of the earth,* as miasmata were formerly supposed to be:—it may be generated in the air:—it may have the property of radiant matter, and like heat and light, it may be capable of passing through space unimpeded by currents: like *electricity,* it may be capable of moving from place to place in an imperceptible moment of time." Another writer says:—"The rapidity with which Yellow Fever and Cholera extend their influence is at variance with the doctrine of contagion, as founded on truth, analogy, and impartial observation."

Dr. Kennedy gives some account of the origin of Cholera in India, in the year 1817. He traces the origin of the disease to remarkable climatic changes that occurred in Bengal during that year. He alludes to the extreme uniformity and levelness of the country; *its excessive moisture,* from its multitudinous intersections by the branches of the Ganges, and from the swarms of tanks, or artificial ponds, created by the dictates of blind superstition, and the agricultural necessities of the country. The rainy season begins about the middle of June, and continues during the four succeeding months. In the year 1817, by the month of August, the measure of rain which had descended *was one-third greater than the common quantity,* and, a short time after, in different and distant parts of the Province, having no mutual intercourse with each other, an aggravated type of Cholera broke out.

It is well known, that a vast quantity of electricity is raised from the earth by evaporation, but, *during that year, in Bengal, in order to carry off the additional quantity of water which fell, one-third more than the average quantity of electricity would be abstracted from the earth: hence the currents passing through the crust of the earth from east to west would be proportionably diminished; and the succulent roots, vegetables, fruit, &c., growing on the soil through which such currents passed, would be left negative to a proportionate degree.* Did not the extra amount of sickness produced by Cholera afterwards, on an average, bear some proportion to the increase of rain in the above instance? I do not state this circumstance because I consider it essential to my theory of Cholera, but because it seems to present at least one reasonable cause for the variations in the electric currents, a general fact, which, I think, has been sufficiently demonstrated already; although its application to the subject on hand has yet to be considered.

If Cholera be really produced by the cause which I have supposed, then it will appear that those modifying conditions and circumstances, that affect the electric fluid, must also have an influence upon the progress and general characteristics of the disease. Now, as far as I have been able to learn, the analogy appears to be complete. The electric current travels from east to west,—so does Cholera.

Evaporation carries off electricity to the upper regions of the atmosphere, and of course it must favour the disease. By all experience, Cholera prevails most in low, damp, marshy regions, where evaporation is increased.

Moisture is among the best conductors of electricity. Cholera generally travels along the shores of seas, lakes and rivers. Messrs. Jameson and Scott remark, that "troops in India, marching in cool and dry weather, enjoy a considerable immunity from the disease." Does not the Editor of the *British and Foreign Medical Review* make a blind grasp at the idea advanced in this paper, when he says, in reviewing Dr. Kennedy's work?

"That moisture *per se* is not powerful in spreading the disease, may be presumed from the retardation of the virus by seas and broad rivers, but it does not follow from this that moisture *may not be one of the conditions which is necessary to constitute the peculiar condition of the air necessary for the rapid development. It is certainly in this direction that we look for some probable elucidation of the unknown laws of the choleric virus.*"

The following extract from an editorial, in this journal, vol. 4, page 219, is authority to which it gives me pleasure to refer, in support of this position:—

"A careful examination of all the evidence with reference to the origin and progress of the cholera, discloses this important fact, that a humid atmosphere, wet and sultry weather, and marshy situations, are peculiarly adapted to its development. Exceptions will undoubtedly be found to the complete truthfulness of this observation, but in its main features the observation will hold good, and may be safely acknowledged as a rule. In 1817, the summer was a peculiarly rainy one at Jessore, and the city itself is surrounded by marshes. In 1846, Dr. Thom of the 86th regiment, stationed at Curachee, observes that 'the thermometer stood at from 98 deg. to 104 deg. Fahrenheit, and the quantity of moisture was greater than I ever saw in any part of the world, at any season, the dew point being at 83 deg., and the thermometer in the shade being at 90 deg., the lowest range; even this gives 12.19 grains of vapour in each cubic foot of air;' and he further shows that the quantity of rain which fell was unusually great. When the epidemic raged in Burmah, Dr. Parke observes,—'during its progress, it attacked chiefly or exclusively the towns and

villages situated in low and marshy places, on the banks of rivers and shores of the sea.' In India and Hindostan, it was observed to prevail most frequently with southerly or easterly winds, which favoured moisture, and as a general rule, we may observe, that this excessive moisture was either a prelude to, or an accessary of, its appearance, as witnessed by Dr. Prout, during its existence in England, in 1831–2; and, wherever it has prevailed, this fact is notorious, that the most marshy situations, the worst drained localities, have been especially selected as the sites of its greatest virulence. Whether all this induces a cause of malarial origin, of *electrical atmospheric disturbances*, or whether this state of the atmosphere predisposes to the generation of animalculæ or fungoid causes of the disease, is a matter of little moment, as regards the lesson obviously taught. Although exceptions are to be found of its prevalence in dry and arid situations, yet they are too few to invalidate the above position as the rule."

Volcanic regions are peculiar for their electrical phenomena, arising I suppose from the little effect which electricity has upon the soil, originating in lava. From several accounts that I have read, Cholera seems to have been peculiarly virulent in such localities.

Limestone must be favourable to the conduction of electricity, from the porosity of its texture, and the consequent water which it contains. A letter published in the *Boston Daily Advertiser*, some few months ago, from Dr. C. L. Jackson, states, that the cities situated on limestone or tertiary soils, have always suffered most severely from this scourge; while the primary or granitic regions have never been visited to any considerable extent. It never has visited the granite countries of Switzerland, or Tyrol, in Europe, while it followed the calcareous districts around. And since it did not occur in the primary districts of Maine, New Hampshire, Vermont, and Massachusetts; while it did follow the calcareous formation through Canada and New York, and along the Mississippi, Dr. Jackson infers, that *the calcareous soil or water has much to do with the production of the disease.*

I am of opinion that the profession has been misled respecting the cause of Cholera, by looking too exclusively to the atmosphere, as the source of the disease. A distraction of ideas seems also to have arisen from the use of the terms "predisposing," and "exciting cause." Not that I suppose these terms to be always improperly implied in speaking of Cholera, but from all that I have been able to learn, I am induced to believe that every case of Asiatic Cholera has resulted from something that the individual had taken into his stomach. Before entering on this subject, however, I may mention one predisposing cause which, during the prevalence of Cholera, is peculiarly dangerous: that is, an irritable state of the bowels, to which some people are liable. This may arise from a defect of the contractility of the intestinal capillaries, so as to give the ingesta of the canal *too direct an influence upon the serum of the blood;* or, according to the electric theory, it may arise from a constitutionally *negative* condition of this portion of the system.

Dr. Bell, in a lecture published in this journal in February last, uses the following language:—"The facts alluded to all display the general pervasion of something unknown, which influences the *physical*, as well as the *animal world*, but is wholly beyond the power of men to stay, and did time permit, others might be added still more convincing, bearing upon the change observable in the features of disease, both in the *animal* and *vegetable* kingdom, long before the appearance of Cholera. *It seems impossible to doubt the existence of a cause infinitely more general than mere contagion.*" I have endeavored to delineate such a cause, and if I am correct, would not different physical, vegetable and animal substances, taken into the alimentary canal, produce Cholera in the individual, just in proportion to their *negatively electric quality:* for it must be presumed, that where such a deficiency of electricity prevails in a locality, those substances which are naturally negative, under ordinary circumstances must be rendered still more so by the general cause. Andral found that of all the fluids of the economy, the serum of the blood is the most decidedly alkaline; and whatever the nature of the disease, or its duration in which he had examined this fluid, he never found the intensity of the re-action sensibly vary. The alkalies are generally positive, and the blood is in this state to a high degree. In Garrod's Lectures on the Chemistry of Pathology, published in the *Lancet*—while treating of Cholera the lecturer says:—"In this disease the evacuations very much resemble whey in appearance; have usually a very *strongly marked alkaline* reaction and effervesce, on the addition of an acid." Now in order to account for all the phenomena of Cholera by the cause which I have identified, we have only to suppose, that substances of a strongly negative character are brought in contact with the mucous membrane of the alimentary canal; but the authentic records of the disease fully exonerate us from the necessity of depending upon mere supposition in this matter.

(*To be continued.*)

ART. IV.—REPORT OF THE SICK ON BOARD OF THE SHIP "ST. GEORGE," FROM LIVERPOOL, BOUND FOR NEW YORK, WITH 338 STEERAGE PASSENGERS WITH CASES, AND REMARKS ON VENTILATION.

By George D. Gibb, M.D.,
Licentiate Royal College of Surgeons, Ireland, Member Parisian Medical Society, &c.

Having been appointed surgeon to the packet ship "St. George," of 846 tons, Thos. J. Bird, commander, we sailed from the port of Liverpool, on the 12th Feb., with a cargo of goods, 4 cabin, and 338 steerage passengers, besides a crew of 27 men, including officers, making a total of 369 souls on board; and, after a very rough and stormy passage of 36 days, we reached New York.

The annexed table exhibits a statement of the diseases and accidents which presented themselves during the voyage for treatment. A great many were those most generally common on ship board, as for instance, constipation, brought on by a want of proper exercise, a too sedentary life, and the nature of the bread eaten, which was the ordinary sea biscuit; diarrhœa, produced by the sudden change of diet, and, in some instances, from eating food imperfectly cooked; sea sickness; bronchitis; scalds; wounds; contusions, and so forth. I shall detail the features of a few of the cases which proved interesting, as well as offer a few remarks on some of the diseases.

Sea sickness was prevalent almost throughout the entire ship as soon as we had fairly entered St. George's Channel, but only 14 cases came under my hands for treatment after we were some days out. Of these, some were complicated with diarrhœa, others with intense headache, others with constant and unremitted retching and vomiting. In the first class, a powerful anodyne, repeated if necessary until sleep was induced, had the most beneficial effect, completely checking and preventing a return of the sickness. In the second, where intense headache of a painful character was present, and the bowels not out of order, an emetic was of service, followed either by an anodyne or mild aperient. In the last form, the most distressing to the patient, and frequently very difficult to arrest, a pill, composed of two drops of creasote and half a grain of acetate of morphia, when retained on the stomach, acted like a charm, the retching and vomiting ceasing completely in the course of a few minutes, but sometimes returning if the ship at the time should be rolling very much, when a second and even a third pill were found necessary to arrest it. Occasionally, half an hour after the vomiting had ceased, the treatment was followed up with a draught of rhubarb and laudanum.

Brandy is most generally used to check it in vessels where no surgeon is on board. I have seen it used in steamers when crossing the St. George's and the English Channels, with apparently very good results. On one occasion, however, a very severe case occurred in the next berth to my own: brandy was repeatedly administered by the steward, but with no effect: I recommended a wine glassful of very cold water to be drank, and the patient to lay on his left side, when the sickness ceased.

Although sea sickness is curable, and may be prevented by medical treatment, still there is no actual specific for the disease. Many cases have been known to resist all the means used as a cure, and others, again, of a severe form, have gradually subsided from no treatment at all, but simply from rest in the horizontal posture. It often affects people during the whole of a voyage and produces great emaciation.

One case of *abortion*, and another when it was threatened, appear in the report. The subject of the former was a very delicate and weakly young woman, aged 22, the mother of two children, and who was in her third month of pregnancy. She became very sea sick after leaving Liverpool, and continued so whenever the weather was stormy. On the 8th March, she was seized with labour pains, followed by uterine hæmorrhage and aborted during the day. Next day she had diarrhœa, and hypogastric pain and tenderness, which quickly yielded to treatment. She continued delicate the remainder of the voyage.

In the case where abortion was threatened, the patient was pregnant four months. On the 15th March, a violent fit of sea sickness brought on pains in the back, with a bearing down sensation in the abdomen as if labour was commencing. A powerful anodyne draught, taken immediately, completely arrested these symptoms, as well as the sea sickness, and her health continued good afterwards.

A pregnant woman cannot be placed in a worse situation than at sea, where she is not only liable to abort or miscarry from sea sickness or some other disease common on board ship, and from the rolling and pitching of the vessel, but also from her fears becoming excited from the natural idea of sudden danger so prevalent amongst people who, for the first time in their lives, go to sea, when the ship may be struck with a heavy wave, and roll almost on her beam ends, or when a sudden storm arises, or a squall strikes the vessel.

As an example of miscarriage from fright, I have only to refer to a late number of the *Lancet*,* wherein is a quotation from a description of the finding of the body of one of the unfortunate sufferers in the "Ocean Monarch," from which the following is extracted:—

> "This woman had been thrown into premature confinement, and was partly delivered of a child, which was brought with her on shore. She appeared to be about 43 years of age."

The writer then concludes with—

> "What must have been the last agonies of this unfortunate creature, when birth and death were thus at once struggling within her?"

The case of *arthritis* was of the acute form, and one of a very severe character, occurring to the steward of the ship, a thin spare man, aged 60, accustomed to a luxurious diet, and who stated he had never been sick during his whole life. There were inflammation of the left knee joint, with redness and swelling, great tenderness and pain; the tongue was loaded with a thick, heavy fur, and his pulse was full and hard; the right ankle, the great toe of right foot, the left ankle, and the left knee joint, were successively attacked, and finally the right hip joint was invaded.

He was copiously bled at the onset of the disease with benefit, and put on calomel and opium, as recommended by Sir Benjamin Brodie in cases where there is a translation of the disease from one joint to another; the joints were wrapped up in cotton wadding; and by the 14th day he was free from pain.

There was a tendency to gout, also, in this case, as excruciating pain was complained of when the foot and big toe were affected, showing an indication for the use of colchicum, but, having none on board, reliance was placed on the former medicine until the mouth was affected, the disease gradually yielding, so much so, as to permit of his sitting up on the 18th day convalescent. He had, however, occasional returns of the pains in his knees and toe for a fortnight after.

Among the cases of *bronchitis*, was one of a severely acute form in an infant aged 20 months, which proved fatal after an illness of five days. The child had been previously suffering from chronic hydrocephalus.

The case of *fracture* was one of the ribs of right side, in a girl aged 20, who was thrown out of her berth with great force, from a sudden lurch of the vessel, striking her chest and side against a box lashed in the middle of the floor.

The cases of *contused wounds* were the consequences of falls, where the head was implicated in each.

Scalds were inflicted during the cooking of their food by the passengers themselves.

* Page 326, vol. ii., for 1848.

The case of *Synovitis* was the result of a contusion of the right knee joint in a boy.

A well marked case of *maculated typhus fever* broke out eight days after our departure from Liverpool. It was accompanied with capillary bronchitis and cerebral congestion, and the maculæ appeared over the chest and arms, on the fifth day.

The patient, a very stout and plethoric young woman, aged 20, of sanguineous temperament, was removed to the house on deck, separate from the rest of the passengers; and, notwithstanding the most active treatment, she succumbed on the seventh day. When first taken ill, added to the usual symptoms of typhus, she had muco-crepitating and sibilant rales extending over the whole of the posterior part of the lungs, very little cough, suffused cheeks, congestion of the ocular conjunctivæ and intense headache. She had also diarrhœa, for which symptom, in fact, she sent for medical assistance. On the evening of the second day, mild delirium set in, with jactitation and picking of the bed-clothes, which symptoms, accompanied with great prostration, existed to the last. The pulse was very feeble, and the sounds of the heart indicated great debility, both the first and second possessing very little impulse and force. I was led, therefore, to place my chief dependence upon wine, added to other treatment. The prognosis was serious from the commencement.

When the nature of this formidable disease was first determined, my mind was fully alive to the danger run by the passengers and crew from contagion. Removal to a part of the ship entirely separate from that occupied and situated where there was constant exposure to fresh air, became immediately necessary. The house on deck in front of the main hatchway was given up to me by the captain for this purpose, and to serve as an hospital; and too much praise cannot be awarded to him for his energy and desire to forward my wishes with regard to the sick on that occasion. This house was large, very well ventilated, and had the advantage of having its floor dry, which was not the case below. It contained accommodation for 16 patients. To the removal of this patient, aided by the very active precautions taken of using daily fumigations, and making ventilation quite free between decks, may be attributed the prevention of the spreading of this disease; for experience has proved on various occasions, unfortunately too numerous, that when ship fever once occurs in the hold of a vessel where hundreds are crowded together (the same berth, perhaps, occupied by the sick and healthy), and allowed to terminate there without removal elsewhere, the spread of the disease has proceeded, destroying numbers during a voyage, and becoming, as it were, an endemic disease. Those persons, too, who may escape contagion in a ship where fever is raging are almost sure to be seized with some form of fever after landing, from debility arising from exposure to its influence on board, and a predisposition to disease excited from the same cause.

How many hundreds of lives, indeed, might have been saved by such timely precautions as were adopted on board of this vessel, and it becomes a matter of the greatest importance to be brought before the Legislature of any country to make salutary regulations, medical and hygienic, to be adopted on board of every vessel, and more particularly those whose trade it is to carry emigrant passengers. Further on I shall enter minutely into the manner in which ventilation was provided for in this ship, and the precautions taken in fumigations and cleanliness.

After the termination of this case of typhus fever, five cases occurred during the voyage with the symptoms of continued fever, and as vigilance was used to detect any case in time, these cases, by early treatment, were converted into ephemeral fevers of from 24 to 36 hours' duration.

Some diseases appear in the report, as, for instance, phthisis, morbus cordis, caries, syphilis, and some others, which had existed before the subjects of them had embarked, many of them becoming aggravated at sea, and thus coming under my hands for treatment.

Diseases and Accidents.

Febris Ephemera,	5	Scabies,	1
" Typhus,	1	Acne Punctata,	1
Arthritis,	1	Porrigo Favosa,	1
Pleurodynia,	1	" Scutelata,	1
Lumbago,	2	Pediculi Pubis,	2
Cephalalgia,	4	Threatened Abortion from Sea Sickness,	1
Morbus Cordis,	1	Abortion,	1
Catarrhus,	2	Prolapsus Uteri,	1
Bronchitis,	4	Contused Wounds,	4
Phthisis,	1	Incised do.,	2
Hæmoptysis,	1	Contusion,	4
Cynanche Tonsillaris,	3	Sprain,	1
" Parotidea,	1	Scalds,	8
Gastrodynia,	2	Anthrax,	1
Sea Sickness,	14	Ulcers,	2
Constipatio,	30	Syphilis,	2
Diarrhœa,	12	Gonorrhœa,	1
Dysenteria,	1	Synovitis,	1
Hæmorrhoids,	2	Fracture,	1
Nephralgia,	1	Caries,	1
Ischuria,	1	Relaxatio Sphincter Ani,	1
Amenorrhœa,	1	Paronychia,	1
Commencement of Menstruation,	1	Tumour,	1
Conjunctivitis,	1		
Erythima,	1	Total,	134

The foregoing report shows the total number sick to be 134, including 9 seamen, and among that number occurred 2 deaths.

Of the 338 steerage passengers on board, there were:

Males, . .	219	
Females, . .	119	
		338
Natives of England and Wales,	41	
Ireland, . .	292	
Scotland, . .	4	
Poland, . .	1	
		338

Children under 10 years of age, 39.

By the new passenger act, all vessels carrying steerage passengers have, in addition to improved cooking accommodation, &c., to provide each passenger* during the voyage with, per week, 2 lbs. of oatmeal, 1½ lbs. biscuit, 1 lb. of each flour, peas, and pork, and a quantity of vinegar. Besides these, each adult passenger is daily served with three quarts of water.

* I think those under the age of 12 months excepted.

In the St. George, the following was the weekly allowance of the passengers:—

2 lbs. biscuit,	1 lb. rice,
1 lb. flour,	1 lb. peas & beans,
1 lb. oatmeal,	1 lb. pork,

together with the daily allowance of 3 quarts of water.

The Black Star Line of Packets are more liberal again, as in their printed circular they engage to provide each passenger with 70 lbs. weight of biscuit, flour, oatmeal, and rice altogether, (given at least twice a week during the voyage), and 3 quarts of water per day, which, allowing the average passage of five weeks, will be giving to each passenger exactly double the amount of provisions served in the present ship.

In all emigrant vessels there are three very important things requisite when at sea, the first is *free ventilation*, the second, cleanliness, and the third, fumigations. Bearing them in mind when first I went on board, I saw on all occasions that they were strictly attended to and put in force.

The first was admirably provided for in the following manner:—Between the first and second decks were 280 passengers: at the stern four large port holes, called dead lights, existed: these were kept constantly open, unless in very stormy weather, and the sea so rough that the water entered, when they were closed, and, to supply their place, several air pipes from this place passed upwards, and terminated immediately under the stern cabin windows by six oval holes. In the fore part were two large circular funnels, communicating with the between decks. In the centre was the main hatchway, with companion ladders, always open unless when a heavy sea was washing over the vessel; another hatchway existed behind the main mast, covered over with the roof of the second cabin, and a third abaft the fore mast, also covered. The two latter were never closed, and permitted of a very free ventilation when the main hatch or stern ports were closed: when all were open, ventilation was as complete and perfect as possible. In addition a wind sail was occasionally used to circulate the fresh air.

The second cabin, which was on deck, contained 58 passengers; it was ventilated by means of a skylight on top, and two doors in front, which were always open.

The second, *cleanliness*, not the less important, was attended to the first thing every morning. During each night, a quantity of dirt and filth would be collected as a matter of course, where such a number were crowded together: if the ship rolled much, it would, as a consequence, be well scattered about: all this was carefully removed, the decks were scraped and cleaned, and then, if the air was in any way foul, the third requisite was put into effect, viz., *fumigation*. This was done on different occasions with the following substances made to circulate through every part of the vessel:—Sir William Burnett's disinfecting fluid diluted and sprinkled in all the berths, as well as over the ship; solution of chloride of lime used in a similar manner; the fumes of burnt coffee, formed by stirring up green coffee with red hot irons; the fumes of tar formed in a similar manner with heated irons; and lastly, chlorine gas. The fumes of burnt coffee and of the tar, cannot be too highly spoken of; both were agreeable to the passengers, and seemed to keep the place fresh for a longer period than the other means used. They were employed on alternate days for the last fortnight of the voyage with great benefit towards the health of the people and the prevention of disease.

Ventilation, as a sanitary measure, when properly carried out, has been one of the greatest steps adopted of late years towards the preservation of the public health; and at the present time, when our continent is threatened with a direful scourge, ready to sweep off its thousands of victims, it becomes a matter of the deepest consideration to all in the profession to prepare to ward off its effects by all the means at our command; and one of the most important and valuable at the present time is that which is now to be considered. But it is more particularly towards its adoption in emigrant vessels that it is wished to draw attention.

A very great number of vessels are annually chartered for the purpose of carrying emigrants, which are not in any way provided with the ordinary means of accommodation for them, and where such a thing as ventilation is absolutely unknown, perhaps the very word itself not understood by not a few of the captains.

Others again, as, for instance, many of the American Line of Packets, old and new, the Black Star Line, and some few others that might be mentioned, are expressly employed in this trade, and have been properly fitted out for that purpose. In the generality of these, too, in addition to the second cabin on deck, the between decks, or that part between the first and second decks, is only used for passengers, the same as the ship St. George, a wise arrangement, as it is the only part of the vessel that will permit of comfortable ventilation.

On the contrary, the first class of vessels already spoken of, which are seldom chartered for the same object every voyage, if they are large and have no cargo of goods on board, often are known to occupy as many as three different holds, all crowded with people, and numbering sometimes upwards of 600. Here, of course, the only means of ventilation is by the main hatchway, and holes communicating one deck with another, for a great part of the vessel is under water, and will not permit of ventilation aft as exists in most of the American vessels.

This class of ships, with bad accommodation, no ventilation, fumigations and cleanliness unknown on board, and carrying at the same time a large number of passengers, is that which comes to our Canadian shores! Can it be wondered at if typhus and other malignant fevers should rage, with no means of preventing them existing, more particularly, too, if no medical officer is on board!!

To remedy this state of things becomes an object of the greatest importance to every one. To be sure, something has been done by the Home Government in employing surgeons in certain classes of vessels, but a great deal has been overlooked, and that, too, which is equally as important as the employment of a surgeon, inasmuch as his efforts will be rendered futile if he cannot have at his command such a provision as ventilation alone.

There are several ways of carrying out certain measures, and adopting the means of insuring perfect venti-

lation in almost every ship, and at very little expense to the owners.

In the first place, no vessel should carry over a certain number of passengers, and that should be regulated according to the size of the vessel.

In all vessels too, unless those built expressly for this trade and possessing the most perfect means of ventilating two separate decks below, the upper between-decks should be the only part used and allotted entirely to passengers, for this part of a ship can be tolerably well ventilated by means of three different hatchways, the stern ports or dead lights, and by the construction of funnels forward. If the vessel is flush fore and aft, with no poop or houses on deck, the probability is, that the three hatchways may be closed during stormy weather, to prevent the washing of the sea below, and the dead lights may be shut; to remedy this, holes should be constructed leading from the stern upwards, and terminating above these lights, thus affording a continued stream of air, which is entering from the large funnels forward. If the vessels are constructed in a similar manner to some of the regular American packets, two of the hatchways are protected in stormy weather, and are always open, but even then the extreme fore and aft ventilation should be provided for.

Many other methods of ventilation might easily be contrived in ships; it would be exceeding the limits of this paper to enter into them, but one shall be mentioned, which, in addition to what has been described, always proves a most valuable auxilliary. The wind sail is here referred to, and its use, independent of being an excellent ventilator, assists, from the great current of air forced below, in partly drying the decks, which are always wet and damp during the whole period of a voyage, and which is a very fertile source of disease.

If a house exists on deck, and has accommodation for the arrangement of berths, it should in every instance be given up to serve as an hospital for the sick, and thus prevent that abominable practice of having the sick and healthy in one berth. It would be well at the same time to regulate the berths for the single men and women who may be emigrating separately from their families, as it is a fact known, that the same berth often contains numbers of both sexes who are not related to one another, and who happen to become placed together accidentally, such intercourse leading to consequences which favour prostitution.

The means of fumigation and attention to cleanliness on board should not be overlooked. All vessels carry tar; it, when other means are not at hand, is perhaps as useful a thing as can be employed, the fumes being generated in the manner already described.

And lastly, a code of instruction should be drawn up relating to the means to be employed towards the prevention of disease, and intended specially for the use of Captains of vessels who have no Surgeons, thus placing at their command at all times a ready and useful adviser; and which also should contain matters towards the comfort, both moral and physical, of the passengers on board.

We should then have few deaths amongst the poor emigrants; they would reach our shores in a tolerably healthy condition, and we would escape the annual visitation of typhus fever brought by them of late years particularly, and which has proved fatal to so many of our valued citizens, who, in endeavouring to alleviate the sufferings of their fellow creatures, have themselves fallen victims.

All British ships carrying emigrants above a certain number, are obliged, according to law, to carry a Surgeon, who receives so much per head on landing them at their place of destination; but this does not apply to American vessels; fortunately, however, very few of the latter leave any British port without one, and if the Surgeon does not get paid in the same manner as on board an English vessel, he at any rate gets a specific sum, together with his passage free, which, particularly if it is his desire to emigrate, is a consideration to many in our badly paid profession.

In conclusion, to give a proof of the danger passengers run from not having a Surgeon on board, it is necessary only to cite the arrival of a vessel at New York before the St. George, in which as many as seventy lives were lost during the voyage, and it cannot be supposed for an instant that a Captain of a vessel is competent to treat such a disease as ship fever, or any other epidemic when once it has broken out.

Montreal, 28th March, 1849.

ART. V.—*Geological Survey of Canada. Report on the North Shore of Lake Huron. By* W. E. LOGAN, Esq., *Provincial Geologist.*

Interesting as well as important though the above-named *detached* portion of the recent labors of our indefatigable Provincial Geologist be, we should have, under all circumstances, been disposed to defer drawing the attention of our readers to it, till the appearance of the *general* Report of the progress of the survey during the past season, embracing not only more extended researches along the North Shore and Islands of Lake Huron, from Penetanguishene to the Sault Ste. Marie, on the western extremity of our wide-spreading territory, but also an examination of the geology of the Eastern Townships and country lying south of the St. Lawrence, between the Richelieu and Chaudiere rivers, so as to connect the work already accomplished in Gaspé, at the eastern extremity of the Province.

But, from this inclination we have been diverted by two circumstances;—the one, that it having been judged desirable that so experienced an observer as Mr. Logan should pay a special visit to that part of "the North shore of Lake Huron, on which several *mining locations* had been claimed of the Government, and a considerable capital expended by the parties interested therein, in order to investigate the general nature of the mineral ground of those districts, and ascertain facts to elucidate the probable productiveness of the mines in that part in which the development of the metalliferous veins had been worked to the greatest extent;" and that visit having been attended with encouraging results, we have naturally been disposed to think that a slight notice of the particulars would not be unacceptable to the public. The other motive is, a desire to do a timely

act of justice to Mr. Logan, with reference to a "little scene," which, not much to the credit of one of our legislators, was lately enacted in the House of Assembly, on a motion being unexpectedly made for reprinting the whole of the former Geological Reports. Before entering upon either of these topics, however, we would wish to bring to the recollection of our readers, that in more than one of our former desultory articles on this interesting subject, we felt impelled to advert in strong and even sarcastic terms to the miserably puny and undignified, *un-British* scale of the staff of our Provincial Survey, as a national work, compared with the magnificent arrangements of several of the neighboring States; and we did so the more earnestly, because the services of so distinguished a general director of such an undertaking having fortunately been obtained, we felt mortified that his invaluable time should be frittered away in the subordinate drudgery of the mere draftsman and copyist, to the inevitable prejudice, nay, sacrifice, of more important scientific investigations; at the same time that we were unwilling that the thereby indefinitely protracted completion of so important a work should be dependent on the uncertain life of *one* individual, however gifted! Unfortunately, however, for the country, our humble yet urgent appeal to those in power has been altogether unheeded; and the consequence has been, that, in spite of the most active and indefatigable exertions, both mental and corporeal, on the part of our Geologist and his "fidus Achates," Mr. Murray, the Provincial Survey still "drags its slow length along" at a pace which threatens to assign its completion to a future generation.

As our limited space will not permit our at present reverting to our former remarks on this subject, we must be content to refer our readers to the numbers of this Journal for August, September, and October, 1847, as those in which they appeared—reserving to ourselves the option of hereafter appending, in notes or otherwise, such quotations as we may deem advisable.

1st, then, let us, as a desirable preliminary to our present object, endeavour (if possible!) to reinstate our worthy Geologist somewhat in the favorable opinion of our readers, despite the late "heavy blow and great discouragement" inflicted on his professional acquirements by the learned member for Bytown,—by at once placing the evidence on both sides in the scales of public decision. All that we know and need state of the honorable member is, that he is by profession "learned in the law," and for the first time an aspirant for further fame in Parliament, and might have, therefore, perhaps, been expected to be somewhat diffident and wary. But it is rather an unfortunate circumstance for this young forest-clad country of ours, that no sooner does many a new-fledged M.P.P. make his appearance in the Legislative hall, than he feels as if at once intuitively invested with all the collective wisdom of ancient and modern times; and that there is no question in jurisprudence, political economy, or commerce, however intricate—nay, no point in science, however abstruse, on which he cannot at once give an authoritative *Parliamentary* vote and opinion, forgetting all the while the good old adage, *Ne sutor ultra crepidam;* and that, perhaps, the investigation of the very subject on which he is so glibly jumping to a conclusion, may have cost many a gifted individual a whole life of study, and still left room to doubt. Whether this remark will at all apply in the present case, let the reader judge, after perusing our comments on the following extract from the report of a debate in the House of Assembly on the 7th ultimo:

GEOLOGICAL SURVEY.

On a motion made by Mr. Bell for the reprinting of the Reports of the Geological Survey, some conversation arose.

Mr. Bell said, that these Reports, which were of infinite value, were almost entirely out of print, so that it was impossible to get a copy for love or money, he had known as much as 10s offered for a single copy. The printing of a few thousand copies could not cost more than £150 or £200, and he thought hon. members ought not to grudge that sum when they added so much to the expenditure of the country by the length of their speeches.

Mr. Hincks hoped the motion would be withdrawn, these Reports were already on the journals of the House, and in the possession of hon members, and the House ought to set itself against the printing for the use of the public. The Reports must be printed in both languages, and would probably cost as much as £1000. If there was really such a demand for these Reports, why did not some printer publish an edition independent of the House?

Mr. Bell had no objection to withdraw his motion, if it was the general wish of the House The country was very anxious to have these Reports, but if hon. members wished to reserve the money for long speeches, he could not help it.

Mr. McDonald, (Kingston) suggested that the motion should be withdrawn and referred to committee on printing, to ascertain what the expense of printing the Reports would be.

Mr. Scott, (Bytown) had also endeavoured to obtain copies and never could succeed, and had intended to make a motion similar to this. He had accidently met with one of these Reports, which contained a modest request from the Geological Surveyor, that he should be sent to England to have his education completed, and he should like to have an opportunity of examining others; he would suggest, however, that a smaller number of copies should be printed.

Mr. Hincks concurred in the suggestion of the hon. member for Kingston, that the motion should be referred to the committee on printing. With regard to what had been stated by the hon. member for Bytown, but for the assertion of that hon. member he should hardly have conceived it possible that Mr. Logan should have put such a thing in one of his reports.

Mr. Scott explained that Mr. Logan said, in one of his reports, that it would benefit the service of the Province, if he could go to England at the public expense, to obtain some information on certain subjects.

Mr. Hincks thought that a quite different thing—he could not believe that Mr. Logan, who was a highly educated surveyor, should have required to complete his education.

After some further conversation, Mr. Bell withdrew his motion, on the understanding that the matter should be referred to the committee on printing.

Now, though we rejoice at the motion made by Mr. Bell, as evincing an evident growing desire for a better general acquaintance with the geological character and resources of our Province, we may have our own doubts of the correctness of the estimates of either that gentleman or the Inspector General, and may, moreover, be rather averse to a *reprint* of the different Reports at the expense of the country, thinking it would be quite sufficient for Government in future to restrict somewhat the number of Parliamentary copies, and to authorise their printer to publish for sale, at his own risk, whatever extra number he may choose; and we would therefore willingly leave that part of the matter in the hands of "the Committee on Printing." But not so the slur

which the member for Bytown has in his utter ignorance attempted to cast upon the high professional character of Mr. Logan, and which his lame attempt to explain it away only tended to make worse.

What, however, does the learned, though somewhat self-contradictory legislator himself, after all, admit? Verily, that, *notwithstanding the low estimation in which he held Mr. L.'s attainments, "he intended to make a similar vote* as Mr. Bell;" nay, that "*he would still wish to have a small number printed,*"—not for the benefit of the public, but "*that he might have an opportunity of examining the work of a Provincial Geologist, who, in one of his Reports, had made the modest request to be sent to England to complete his education!*" And that when, in some degree, set right by the Inspector-General ("who, *but for the hon. member's assertion*, could have scarcely conceived it possible that Mr. L. would have put such a thing in one of his Reports,") he attempted "to explain" by saying—(certainly quite a "different thing")—"that Mr. L. had said in one of his Reports that it would benefit the service of the Province *if he could go to England at the public expense*, to obtain some information on certain subjects." Well might the Hon. Inspector-General ejaculate, that that was "quite a different thing;" and add that he could not believe that so highly educated a surveyor should have required to complete his education! But that is not enough; and we will, therefore, take the liberty of going still further, and stating, for the information of the public, as well as of the learned member for Bytown, another "quite different thing," and that is, that after a patient reference to the whole of the Geological Reports, we have been unable to find any such expressions used, or intentions stated, as those laid to Mr. L.'s charge. Nay more, we will fearlessly venture to tell the people of Canada, that that gentleman, far from requiring to complete his professional education, has long been justly regarded and looked up to by the first geologists in the world—for we deem none more so than those of Britain and France—as not only a most able and accurate geologist, but also an elaborately correct practical surveyor and scientific geographer—a grade far above the mere map-maker or compiler: at least such is the proud character assigned to Mr. Logan by such eminently distinguished men as Sir H. De La Beche,* Dr. Buckland,† Mr. Murchison,‡ and Mons. De Verneuil;§ and there are many

* In the Memoirs of the Geological Survey of the United Kingdom, published by order of the Lords Commissioners of the Treasury, Sir Henry De La Beche, the Director General of the survey, a F. R. S., and one of the late talented Presidents of the Geological Society,—in an able paper on the formation of the rocks in South Wales and the south-west of England, repeatedly refers to Mr. Logan as high authority, and in one instance thus expresses himself on the subject of that gentleman's great merits as a geologist: "When, in 1837, the geological survey commenced its labors in the Coal Districts near Swansea, Mr. Logan, who had for several years previously been engaged in a careful examination of that district, which he completed, and with true public spirit presented to the Geological Survey, *of whose maps*, after due examination, *it now forms a conspicuous part*, points out," &c. &c. See Memoirs of Geological Survey, vol. 1, p. 144–6; and also pp. 183–5, and 193 to 202, &c.

† The well known Professor Buckland, F. R. S., another able President of the Geological Society, thus estimates the merits of Mr. Logan, in his presidential address in 1841: "Mr. Logan has also communicated to us a series of minute results of extensive examinations made by himself on the character of the substratum immediately below the coal series in South Wales, &c., everywhere characterized by the extensive remains of stigmaria ficoides, &c., and the remarkable fact of the presence of pebbles, or rounded fragments of coal, in certain great beds of the coal formation, from which we learn that some of the older beds of coal had assumed an indurated state before the deposition of the more recent strata of the great formation," &c. See Address, 1841, pp. 33, 37, and 38.

‡ J. Murchison, Esq., F. R. S., another eminent President of the Geological Society, and author of the celebrated work on the Silurian System, does similar justice to Mr. Logan's merits, in his annual address delivered in 1843, by referring in strong terms to not only his valuable labors in Wales, but also to his later investigations in Pennsylvania and Nova Scotia, in the following terms: "Availing himself of the prior researches of the American geologists, Professor Rogers and his assistants, who had prepared a valuable map of Pennsylvania, Mr. Logan has laid before us a very clear sketch of the general relations of the Pennsylvania carbonaceous deposits, and their chief convolutions. *Since that time the Government of Canada has* WISELY *selected this well trained field Geologist to execute a mineral survey of the whole Province*," &c. &c. See Proceedings of Geological Society, vol. 4, pp. 121 to 127.

And in the great work on the Silurian System above alluded to—the publication of which is stated to have cost £4000—in expressing his obligations to those friends who had aided him in the construction of the splended map which resulted from his elaborate investigations, Mr. M., in justice to Mr. Logan, expresses himself as follows: "I must further state that, *after* my map was engraved, an important improvement in the outline of the carboniferous limestone, on the western flank of the South Wales coal bed, was kindly inserted by Mr. L., who, with great *perseverance* and *ability*, had, unknown to me, laid down upon the ordnance map many details," &c. &c., "*with all that precision which marks the field works of that gentleman.*"

§ *Mons. De Verneuil*, the learned President of the Geological Society of France, in referring to certain facts in the coal formation of Nova Scotia, in a "Discours sur le Parallélisme des Dépôts Paléozoiques de l'Amérique Septentrionale avec ceux de l'Europe," thus speaks of Mr. Logan's high qualifications: "C'est à M. Logan, directeur des travaux géologiques qui s'exécutent dans le Canada, par ordre du Gouvernement, et *l'un des observateurs les plus exacts et le plus consciencieux*, que l'on doit la reconnaissance de ce fait si intéressant," &c. And again, in noticing a variety of the fossil shell orthis, he thus expresses himself: "C'est avec un sentiment de plaisir que nous avons reconnu cette belle espèce des Couches Siluriennes inférieures de Russie, dans les magnifiques collections de M. Logan, à Montréal. Ce *savant distingué* l'avait trouvé à Jessops Rapids sur la Rivière Ottawa, dans des Couches, du même âge que celles de Trenton."—Le Bulletin de la Soc. Geol. de France, 2d Serie tome. 1st, 1847.

To the above we may be permitted to add, that Mr. Lyell, the well known geologist and traveller, in his late interesting tour through America, makes frequent reference to Mr. Logan, as high geological authority; and that Leonard Horner, Esq., V.P. R.S., another eminent president of the British Geological Society, thus characterizes Mr. Logan in his annual address in 1846: "I will call your attention to two sections of coal field, the one included in the valuable series lately issued from the office of the Geological Survey of Great Britain, the work of W. E. Logan, Esq., Fellow of this Society—*so well known to us as an excellent observer*—and intimately acquainted with coal fields, and who was formerly *attached* to that survey;* the other entitled a section of the Nova Scotia coal measures, and also the work of Mr. Logan.

* We have reason to believe that the learned President was in error in saying that Mr. Logan was at any time attached to that survey; and that the fact was, that he was so devotedly and disinterestedly "attached" to the liberal furtherance of Geological knowledge, that he unreservedly and gratuitously made a donation to the Geological Survey of the accumulated results of seven years' laborious investigation,

other eminent authorities, both in Europe and America, to whose plaudits we could readily refer. We cannot, however, refrain from adducing one other *fact*, which in itself speaks volumes,—and we trust Mr. Logan will pardon the liberty we have taken in doing so—that we happen to know, that such is that gentleman's disinterested, single-hearted devotion to the work undertaken by him in Canada, that he nobly declined the offer of a far more extended field of operations, under the auspices of the East India Company, coupled with the enticing salary of £1200 sterling per annum!

2dly. Having thus given vent to our feelings—in justice to a meritorious and esteemed individual, and at the same time availed ourselves of so favorable an opportunity for opening the eyes of the public to the folly, still to some extent prevalent, of *expecting to find* COAL *in Canada*, notwithstanding the decided *adverse* opinion of our gifted Provincial Geologist on that point*—we now gladly return to the object more immediately in view, namely, to take a bird's eye glance at Mr. Logan's late mission to *the Bruce mines;* and we only regret, that, in consequence of the room already occupied, we shall be precluded from devoting so much space to that attractive topic as we could have wished.

Following Mr. Logan's example in "reserving for a future occasion what is to be said on the general progress of the survey in other parts," we proceed at once to state, in the words of the Report, that,

"In addition to this, a very detailed examination of the Bruce mines, on the Cuthbertson location, was made. The various lodes, as far as known, with their branches and all the workings upon them, were carefully measured and mapped. About 1500 tons of copper ores lying on the surface were sampled after the Cornish mode; drill-holes were driven across the lodes in some places at intervals of two fathoms, and in others of three and five fathoms on the surface, in the shafts, and in the under ground levels for the purpose of *sludge sampling* the same, as it is termed; and fifty-five samples resulting from these operations, were forwarded to Montreal, to be assayed by Mr. Hunt, who has since made an analysis of each to determine the quantity of copper contained in them."

Mr. L. then proceeds to observe:

"The North Shore of Lake Huron, on which twenty-two mining locations have been claimed of the Government, in so far as it has come under his observation, presents an undulating country, rising into hills which sometimes attain the height of 400 and 700 feet above the lake. These occasionally exhibit rugged escarpments and naked rocky surfaces; but in general, their summits are rather rounded, and their flanks, with the valleys separating one range from another, are most frequently well clothed with hard and soft wood, often of large growth, and of such species as are valuable in commerce; in many places giving promise of a good arable soil. Many of the slopes are gentle, and many of the valleys wide.

"Five principal rivers, besides several of inferior note, flow through the country, and it appears to abound in lakes. The principal streams are the Thessalon, the Mississagui, the Serpent, the Spanish River, and the White Fish, of which the mouths are from fifteen to thirty miles apart. The Mississagui and the Spanish rivers are the largest two, the reported length of the former being 120 and of the latter 200 miles; the other three are probably not much over fifty to sixty miles each. In the distances measured, the Thessalon and the Mississagui flow from the north-west to the south-east, the Spanish River from the north of east to the south of west, and this is navigable for craft drawing not over five feet, for thirty-five miles from its mouth.

"The series of rocks occupying this country, from the connecting link between Lakes Huron and Superior to the vicinity of Shebawenahning, a distance of 120 miles, with a breadth of from ten to twenty miles, appears to belong to one formation—divided into rocks of a sedimentary, and rocks of an igneous origin.

"The *sedimentary* portion consists of sandstones, conglomerates, slates and limestones. The sandstones are sometimes grey, but more generally white; they are almost purely silicious, and principally fine grained, but the granular texture is often lost, and great masses assuming a vitreous lustre, present the character of a perfect quartz rock, which is met with of both the colors mentioned; and when white, it sometimes exhibits precisely the aspect of the milky or greasy quartz of mineralogists. The quartz rock, in addition to white and grey, is not unfrequently of a reddish color, and sometimes a decided red, seemingly derived from minute and thickly disseminated spots, or a diffused tinge of an orange red, probably due to the presence of iron; but the spots are sometimes of a larger size, and so arranged as to give the stone a speckled appearance. In the granular varieties, considerable masses of the rock sometimes present a white with a faint tinge of sea-green, which seems to arise from a small quantity of finely disseminated epidote. The rock often becomes coarse grained, assuming the character of a conglomerate, the pebbles of which vary from the size of duck shot to that of grape and canister. These pebbles are almost entirely either of opaque white vitreous quartz or various colored jaspers; some few are of lydian stone, and some of hornstone and other varieties. The pebbles are often disposed in thin layers at the top or bottom, or in the midst of finer grained beds; but they are sometimes arranged in thicker bands, which swell into mountain masses, and blood-red jaspers often disseminated in these to a preponderating degree on a nearly pure white ground, giving a brilliant, unique, and beautiful rock, appear to characterize some ranges of considerable importance."

And further:

"In addition to these, conglomerates of a distinctly different character belong to the formation—composed chiefly of syenitic pebbles, held in an argillo-arenaceous cement of a gray, and more frequently of a greenish color, from the presence of chlorite. The pebbles, which are of reddish and gray colors, vary greatly in size, being sometimes no larger than swan shot, and at others boulders rather than pebbles, measuring upwards of a foot in diameter." . . . .

"The limestones belonging to the formation are probably confined to one band, the thickness of which in different parts may range from 50 to 150 feet. The texture of the rock is usually compact, but sometimes partially granular, and its colors are green, buff, and dark gray, the two former prevailing; some of the beds are occasionally met with of a dull white with a waxy lustre, which weather to a yellowish brown on the exterior and appear to be dolomitic. . . . . Interstratified beds of chert are very frequently met with in this band, and they vary in thickness from mere lines to the measure of several inches. The same diversity of color belongs to the chert as to the limestone."

*In spite of Mr. Logan's well founded opinion, with respect to the total absence of coal in the Geological structure of Canada, some ignorant persons still persevere in foolish speculations on that head, to be doomed to certain disappointment; and the same will be the case with those who, innocently mistaking a gay variety of *Iron Pyrites* for massive *Silver Ore*, have lately been furnishing an attractive paragraph in some of the newspapers, headed, "*Silver Mines in Canada.*"

The *igneous* rocks may be classed, as a whole, under the denomination of greenstone trap. The masses they present are sometimes very great, and in such cases the trap usually consists of a greenish-white felspar, and dark green or black hornblende. It sometimes, however, displays a fine texture, and in such cases, a large amount of it frequently holds much disseminated chlorite and epidote.

"Of the members constituting the formation, the sandstones, or quartz-rock, appear to possess the largest volume; the greenstones seem to be next in importance, some of the bands attaining 600 to 1000 feet; the syenitic conglomerates and their associated slates follow, and the limestone band, of which the thickness has been stated, though very persistent, is of trifling comparative amount. . . . .

"With the exception of the limestone, the different descriptions of rock, whether of small or great measure, appear to dovetail among one another, individually thinning down to an edge both ways on the strike. . . . . The limestone band is neither at the base nor summit of the formation; and how far it may be from the one or the other, it is not yet possible to say. Whenever seen, it was found in contact either with syenitic conglomerate or quartz-rock, both above and below. It has not yet been seen in contact with any of the greenstone overflows; but on Echo Lake, there is a great body of greenstone over it to the south, with a thick band of syenitic conglomerate associated with quartz rock interposed between them, and a range of quartz hills above. On the Thessalon Lakes, great mountain masses of quartz rock, with subordinate jasper conglomerates, appear to underlie the limestone, and at La Cloche, a band of 3000 to 4000 feet rests upon it."

"Independent of the overflows, igneous rocks are connected with the formation as intrusive masses, in numerous parts of the area occupied by it. These intrusive rocks consist of greenstone and granite. The greenstones do not seem to differ much in mineral character from those composing the overflows. They constitute dykes, which run in so many directions, that it is difficult to determine the prevailing ones, and vary in breadth from a few inches to several hundred feet. They cut all the interstratified rocks of the formation, igneous as well as sedimentary, and splitting into branches, which often join one another and enclose great fragments and masses of strata, constitute an intricate labyrinth. The granite is, in general, of a decided red color, arising from the presence of a largely preponderating quantity of red felspar, which is mingled with translucent white quartz; mica is not very abundant, and hornblende sometimes accompanies or replaces it. . . . . The different intrusive rocks, as related to one another, display a succession of events in the history of the formation; . . . and evidences of disturbances and dislocations accompany all these successive intrusions, those connected with the granite being the most violent. But there is in addition, another set of disturbances of still posterior date, and it is to these that are due the presence of those metalliferous veins which give the country its value as a mineral region."—

And to this it is now our wish to direct our reader's particular attention, through the medium of the following disjointed extracts:

"The *metalliferous veins* intersect all the rocks that have been mentioned. They are probably themselves intersected by cross courses, breaking their regular continuity; but that slips or displacements of the country on opposite sides of the veins have occurred, when the fissures were formed that constitute their mould or receptacle, is not left in doubt. Numerous instances were observed, where both granite and greenstone dykes, cut by the metalliferous veins, were suddenly heaved considerably out of their course. This fact may by some be deemed valuable, as showing the probable great depth and distance to which the veins may run. The metal which these veins hold in the greatest quantity is copper, and the ores in which it occurs are vitreous copper, variegated copper, and copper pyrites. Iron pyrites is sometimes associated with them, but in general not in large quantity. Copper pyrites in one instance was accompanied by rutile, and in another by the arsenuretted sulphuret of iron and nickel, containing a trace of cobalt. The gangue or vein stone in which the copper ores are contained is in general white quartz, and there is very often present, but not in very great quantity, white compact dolomite, which in druses assumes the form of pearl spar, and brown or bitter spar; calc-spar also appears occasionally in druses in dog-tooth crystals.

"The veins vary in breadth from a few inches to sometimes thirty feet, but when of this last great breadth, or even much less, they usually contain a considerable amount of brecciated wall rock mixed up with the gangue; many of them range from one to three and four feet, and their slope or underlie varies from about 50° to 90°. From such as might be considered master lodes, innumerable branches of various sizes start, some of which visibly diminish before proceeding far, and dwindle to nothing, while others maintain moderate widths, with much regularity, for considerable distances, and may run to a junction with parallel lodes. The lodes have a bearing agreeing with the general strike of the formation, which roughly coincides with the general trend of the coast. They are thus, in a rude way, parallel to one another, and run in a direction between west and north-west, more nearly approaching the latter.

"The quantity of copper contained in the lodes is very various, ranging from what might result from mere specks of ore in some to the contents of large workable quantities in others. But to ascertain what an approach to an average might be, would have required more time and expenditure than the funds devoted to the Survey would authorise, as it would have necessitated the determination of the produce of several—a work requiring the labor of many practical hands in a totally uncleared country. Specimens of ore were taken from many lodes; but it would be a very distant approach to the probable contents of a lode that would be ascertained by means of mere hand specimens, with whatever fair intentions they might have been selected. It appeared a preferable plan to ascertain, with all the precision possible, the produce of the lodes which had been most uncovered and worked on the locations, being persuaded that though some of them vastly surpass in richness any that came within my observation in the interior, others will yet be found to equal them. In no part of the country visited, from the vicinity of Sault Ste. Marie to Shebawenahning, was any great area wholly destitute of cupriferous veins, and it would appear singular if a region extending over a space of between one and two thousand square miles, and so marked by indications, did not in the course of time yield many valuable results.

"In regard to the productiveness of the lodes, it is to be remarked, that it appears probable it will be different in the different qualities of rocks they may intersect. . . . . But so far as Mr. L.'s observation went, it appeared to be a fact that the copper was most abundant in the greenstone, least so in the sandstone or quartz rock, and more copious in the slates than in the syenitic conglomerates. In the quartz rock the white quartz veins often appeared nearly destitute of ore, presenting but a few straggling specks of the yellow sulphuret, at great intervals from one another. . . . . When by dislocation or the presence of a dyke, quartz rock was brought opposite to greenstone, a cupriferous vein would occasionally be found between them, and what might be considered an encouraging quantity of ore was sometimes met with in it. But if a rule is to be derived from what

the rocks appeared to show, it will probably be where the lodes cut the greenstone and have that rock in both walls, or greenstone in one and slate in the other, that their contents will become economically available."

Though obliged to pass over the succeeding interesting observations on the general *geological structure* of the area under examination, we cannot refrain from pointing the attention of our leading geologists to the following decisive paragraph on the subject of *the age of the formation* in the neighborhood of Lakes Superior and Huron, containing the metalliferous veins, which Mr. Lyell in his map of these regions characterizes as hitherto *undetermined:*

"In respect to the geological age of the formation, the evidence afforded by the facts collected last year by Mr. Murray, at points ranging along a line of ninety miles out in front of the coast, is clear, satisfactory, and indisputably conclusive. On these islands, the Potsdam sandstone, the Trenton limestone, the Utica slates, and the Loraine shales, successive formations of the lowest fossiliferous group of North America, were each in one place or the other found, in exposures divested of all vegetation, resting in unconformable repose, in a nearly horizontal position, upon the tilted beds, and undulating surface of the quartz rock, and its accompanying strata, filling up valleys, overtopping mountains, and concealing every vestige of dykes and copper veins; and it would appear that some of these mountains have required the accumulation of the whole thickness of the lowest three, and part of the fourth fossiliferous deposit, equal to about 700 feet, to bury their summits, which were then about the same height over that part of the Huron base of the first known recipient of organic remains, as the present neighboring mountains of the formation are over the surface of the lake.

"The chief difference in the copper-bearing rocks of Lakes Huron and Superior, seem to lie in the great amount of amygdaloidal trap present among the latter, and of white quartz rock or sandstone among the former. But notwithstanding this, there are such strong points of resemblance in the interstratification of the igneous rocks, and the general mineralised condition of the whole, as to render their positive or proximate equivalence highly probable, if not almost certain; and the conclusive evidence given of the age of the Huron, would thus appear to settle that of the Lake Superior rocks, in the position given to them by Dr. Houghton, the late State Geologist of Michigan, as beneath the lowest known fossiliferous deposits—a position which, as will be seen by a reference to the Report of 1846, appeared to Mr. L. to derive some support from evidences on the Canadian side of Lake Superior itself."

We now arrive at the scene of immediate attraction, *the Bruce mines;* but even on that head we are compelled to limit ourselves to a few imperfect extracts, which will do anything but justice to the manner in which the subject is treated:

"Of the 22 mining locations claimed of the Government, on the north shore of Lake Huron, that which bears the name of Cuthbertson displays a collection of mineral veins, which have been more thoroughly tested by the works of the parties interested in them, than any others on the lake. These, therefore, were selected for examination.

"In a former Report on the mineral regions of Lake Superior, some general remarks were made, which should be borne in mind, on the uncertainties that must unavoidably attend the search for such metals as occur in mineral veins, particularly in a new country. These uncertainties arise chiefly from the difficulty of estimating before-hand, with exactness, the quantity of the metal sought that any area in the plane of the vein may produce. This results from three circumstances, the varying proportions in the thickness or form of the vein, the varying proportions of the pure ore in its distribution in this irregular form, and the varying proportions of the pure metal in the irregularly distributed ore. . . . . In some few spots, then, it may be wholly pure ore; in many large and small areas, it may consist of the earthy minerals without any ore at all; and in the remainder, it may consist of any indefinite proportion of the two that lies between all and nothing. The pure ore or metallic minerals are definite chemical compounds, in which the metal is held in fixed proportions, according to the species of the minerals, as found described in mineralogical works; and the irregularities in regard to them arise from two or more species being frequently mechanically mingled together, in proportions as indefinite as those relating to the earthy and metallic minerals. It is evident from this, that the quantity of pure metal, in any give area in the plane of a mineral vein, can be only approximately ascertained, by arbitrarily assuming as data for calculation the results of experiments on parts. The more numerous and extensive the parts selected, the nearer will be the approximation to the truth; and those portions of a lode available for such a purpose, are the outcrop when uninjured by atmospheric influences, horizontal galleries or levels, and vertical or inclined shafts. Nine times out of ten, the results may bear out the calculations from such data; but it should be borne in mind, that any particular case may turn out to be the tenth one, and give results much beyond, or very much below the computation."

Having made these and other pertinent leading remarks, Mr. L. proceeds to form an impartial estimate of the favorable prospects likely to result from the prudently-conducted working of the Bruce mines; and to enable himself to do so—as affording the best criterion of their quality—the ores and vein-stuffs, which had been brought to the surface, *from the various levels, shafts, and excavations,* were sampled by him as nearly to the Cornish mode (with which he was intimately conversant,*) as circumstances would permit, and the results proved very encouraging; but the minute details of these operations would here be out of place; suffice it, then, to refer the reader to our concluding quotation from the Report, as exhibiting Mr. L.'s abstract view of the whole, and to state in addition, that the position of the Bruce mines is nearly bisected by the 84th degree of West Longitude; that it is one of those belonging to the Montreal Mining Company; that the size of the location, or *sett,* as it would be called in Cornwall, is two miles in front by five in depth; that the surface is gently undulating, the ridges running S. E. and N. W.; that the rocks which compose them are greenstone, syenitic conglomerate, with its associate slate, and quartz-rock; that the rear and nearly the whole of the front are occupied by greenstone spread out to some breadth; and that quartz-rock, syenitic slates, with bands of greenstone (probably dykes) are met with in the intermediate space; and that there are copper lodes in both the ranges of greenstone, but that only those in the front part of the location, of which there are several, have been opened, and occupy positions towards both sides of the location. And further, that there is a rude parallelism to one another in some parts of the lodes,

*See article in October, 1847.

and an apparent convergence in others, and the whole are attended with a great complication of branches, which probably run from one to another and connect the whole into one system, emanating from some one great disturbance, the results of which will no doubt traverse all the western locations in succession which cross its direction, mineralising the country through which they pass, according to the quality of the rock encountered. At the Bruce mines, the surface rock which these lodes and their branches intersect, is wholly greenstone, and the branches, as well as the main veins, have copper present in them in various proportions.

Mr. Logan, having patiently gone through the minute details of his "*sampling*" labors, the narrative of which occupies no less than twenty-four pages, besides three of elaborate tables, given in an appendix, concludes his very creditable Report with the following general remark:

"The quantity of copper ore and undressed vein-stuff above ground at the Bruce mines, at the time of sampling them in the beginning of July, was estimated at 1475 tons, and that the average produce is 8.01 per cent. (equal to the average of the dressed ores of Cornwall), giving about 118 tons of pure copper, which, allowing for the mode of assay and waste in dressing, would yield upwards of 650 tons of 15.00 per cent. ore. At the time of Mr. L.'s departure, much activity prevailed in working the lodes, and an expectation was entertained by the mining captains that 250 tons of such ore might be raised monthly. 163 persons were employed in carrying on the operations connected with the mines, consisting of 77 miners, 65 laborers, 4 boys, 11 blacksmiths, carpenters, and other artisans, 2 mining captains, 1 engineer, 2 clerks, and a superintendent, constituting a population, including the families of the workmen, of about 250 souls. Three frame buildings and about thirty log houses had been erected for stores, workshops, and lodging accommodation; and the foundation of an engine house was commenced, in which was to be placed a steam engine of about forty horse power, for clearing the mine of water and crushing the ore for dressing. A pier, or planked platform road, had been carried out about 180 yards, to an insulated rock, on which a wharf had been constructed; and three stone-loaded cribs had been sunk in 10 feet water beyond this, for an additional wharf, for the accommodation of steamers and vessels frequenting the harbour, which is a commodious one, well sheltered from most winds, and not difficult of access. There is abundance of timber for mining purposes and for fuel on the location, and in the vicinity; and on the Thessalon, good pine, hemlock, and spruce were met with in some quantity. On this river, which joins the lake nine miles east of the Bruce mines, there are, in or near the intermediate locations, four falls, about 13, 18, 8, and 3 feet respectively, affording excellent mill sites; and some of the land in the valley is well fitted for cultivation. Little good land, however, is met with along this part of the lake shore, and the front of the Bruce mines' location is particularly rough and rocky; but on Saint Joseph Island, opposite, there is an ample extent of excellent land, at present well clothed with maple, birch, and elm, in some parts, and good pine in others; and being underlaid by the rocks of the lower fossiliferous formations, it abounds in limestone, affording good material for either burning or building."

Having thus brought our desultory comments on Mr. Logan's investigations to a close, we would willingly refrain from trespassing further on our reader's patience, but the opportunity having offered, we cannot resist once more raising our humble yet earnest voice against the miserably contracted scale of so important a national work as the geological survey of our vast territory, compared with that of any one of the neighboring American States; and we could readily find words for referring to fresh powerful reasons for so doing; but as many of our readers may not bear in mind our former animadversions on this subject, we shall be content with referring to the following language used in our article of August, 1847:

"We cannot resist a feeling of utter mortification, while comparing the pigmy as well as tardy efforts made by this gigantic scion of the greatest empire in the world—in behalf of so important a national object as that which they embrace—with what has been so well and *speedily* accomplished by the various American States in immediate contact with our wide-extended borders.

"Let the reader for a moment carry his eye along the imposing line of noble inland seas, and majestic connecting rivers, which mark our southern frontier, through an extent of upwards of thirty degrees of longitude, or more than 1500 miles, from the Gulf of St. Lawrence on the east, to the confines of the long-disputed Oregon territory on the west, and he will find no less than eight of the American States, besides embryo territories in the Far West, come under his observation in progressive succession, namely, *Maine, New Hampshire, Vermont, New York, Pennsylvania, Ohio, Michigan*, and *Wisconsin*. Without stopping to inquire what has been effected by the minor States in behalf of a thorough geological and topographical survey of their interior, let us for a moment refer to the four leading States, *New York, Pennsylvania, Ohio*, and *Michigan*, and we shall witness results that will both surprise and mortify us.

"As, for instance, by an act of the Legislature of *New York* in 1836, the Governor was authorised to employ a suitable number of competent persons to make an accurate and complete *geological survey* of the State, accompanied with proper *maps* and *diagrams*; and to furnish a full and scientific description of the *rocks, soils*, and *minerals*, as well as of the *Botanical* and *Zoological productions*, together with specimens of the same; and further, that one set of such maps, diagrams, and specimens should be deposited in the State Library, and a similar set in such of the literary institutions of the State as the Secretary of State should direct; and that the sum of $26,000 per annum should be appropriated, during four years, to defray the expenses incurred. In addition to which, the eminent geologists, Messrs. Hall and Emmons, in the year 1839, suggested the erection of *a museum* for the proper deposition and arrangement of all specimens in the different branches of natural history;—the zoological specimens to be preserved in glass cases; the fishes, and several of the lower classes of animals in spirits; the botanical specimens in bound volumes, lettered according to arrangement; and the meteorological and geological specimens (which it was supposed would exceed 4000 in number), including fossils, to be arranged in two sets, one conformable to the existing state of science, and the other geographically, with separate divisions appropriated to each county. And, for the completion of this truly noble undertaking was allowed an establishment of *four* principal geologists, with assistants, (whose labors were limited to an equal number of districts, into which the State was portioned off for that particular purpose), a botanist, a zoologist, a mineralogist, and chemist, and, subsequently, a palæontologist, devoted solely to the study of organic remains.

"The geological survey of *Pennsylvania* may be described in fewer words, as having also commenced in 1836, under Professor Rogers, as principal geologist, with a corps of four geological assistants, one chemical assistant, and four sub-assistants.

"The geological survey of *Ohio* may be equally briefly noticed, as having commenced in 1837, under Prof. Mather as principal, with six assistants—the first assistant acting as palæontologist, another as zoologist, and a third as topographer.

"The geological survey of the then *infant* State of *Michigan* commenced in 1837 (with $12,000 per annum allotted for four years for its completion), under the lamented Dr. Houghton, as State geologist, with instructions somewhat similar to those for New York, and consisted of four departments, viz., 1st, The geological and mineralogical; 2d, the zoological; 3d, the botanical; and 4th, the topographical:—the first comprising the State geologist and three chief assistants, viz., a zoologist, a botanist, and a topographer, and four sub-assistants, two of whom were allotted to the zoological department. And specimens were required to be collected and preserved as follows: the State to be supplied with single good specimens; and if more could be found, 16 more to be, if possible, procured, for distribution among the State University and its branches. And by an Act of the Legislature in 1840, the State geologist was further directed to cause to be constructed a map of the State, and of the several counties therein, on a scale of four miles to an inch, and the sum of $2000 was allotted towards defraying the expense; with joint instructions to the State geologist, Auditor-general, and State treasurer, to adopt such measures for their general sale and distribution as to them might seem expedient.

"Let us now compare any one of these liberal, patriotic arrangements with what has been effected in behalf of the wide-spreading British Colony lying in contact with, and far out-flanking the whole of these States. We blush to record the humiliating fact, but stern justice demands the avowal; neither more nor less than the tardy and reluctant appointment of a Provincial geologist, so late as the year 1842, with the *magnificent* permanent aid of *one* assistant, and the still more tardy addition of a mineralogist and chemist! What, therefore, do we find to have been the inevitable natural consequences? As yet, an almost total ignorance of our mineral and other economic resources, beyond what has been gleaned from private researches along the immediate borders of our principal lakes and rivers; and that even in the long-neglected great mineral region of Lake Superior, the Provincial geologist, instead of having been sent forward as the public precursor and promoter of individual enterprise, seemed rather to have been reluctantly employed to bring up the straggling rear, and see that government was not likely to be taken some paltry advantage of.

"Compared with this truly miserable and undignified Provincial arrangement, what might we not have justly expected? Verily, that we should, at the least, have emulated, in generous scientific rivalship, the highly creditable example of New York or Ohio; nay, that a geological staff of double the strength of either of these States might not have been deemed too extravagant an allotment for at once laying open the varied resources of these two Provinces,—more than five-sixths of which are yet a perfect *terra incognita*. Instead of which, the noblest colonial jewel in the British Crown is content to rejoice in the ability of three solitary individuals to undertake the scientific examination of a *trifling* area of about 350 to 400,000 miles, of which the greater part is spread over a wild and difficult mountain region, as yet unexplored by the foot of the white man, and therefore requiring the protracted labors of a whole lifetime! whereas a corps of scientific individuals, such as that of New York or Ohio, might have completed the noble work in the course of seven or eight years."

To the foregoing appeal we once more earnestly invite the attention of the enlightened nobleman at the head of the Government, as well as of his present confidential advisers; and we not the less earnestly bespeak that of our legislators generally—as a patriotic object, most intimately connected with, and tending to the rapid development of the vast internal resources of the Province, and as, *united with the maturing of a well-digested system of general education*, certain of speedily realizing the most powerful and invaluable influence upon the future prosperity of Canada. L.

PRACTICE OF MEDICINE AND PATHOLOGY.

The use of Iron as a Prophelactic against Cholera.—I wish to suggest to those exposed to the influence of cholera, the internal use of iron as a prophelactic.

I conjecture that when the blood is well impregnated with iron, it is rendered less prone to undergo the morbid change in which many epidemic diseases primarily consist. The experience of an individual is insufficient to put this conjecture to the test; and as regards cholera, I have not even that experience to offer. During the prevalence of Irish fever, I believe I did obtain a little negative evidence in support of my opinion, but not nearly sufficient to establish it.

Taken in the form of pill along with solid food, iron scarcely ever disagrees, provided neither fever nor active inflammation be present. Any one disposed to try it against the contagion—for such I believe it—of cholera, will find a grain or two of the sulphate, made into a pill, with extract of gentian, to be taken during, or immediately after, each of the principal meals, a convenient method.—*M. D.—Lancet.*

MIDWIFERY.

The Obstetric Air-tractor.—We (*London Medical Gazette*) make the following extract from a communication forwarded to us by Dr. Simpson, in reference to his ingenious invention of the Obstetric Air-tractor:—

If we could fix upon the *exposed* portion of the fœtal scalp, the suctorial disc of a limpet or cuttle-fish with the usual force with which they adhere to the sea rocks, to which they are attached, we should have in many cases a power sufficient to enable us to apply by them the necessary amount of extractive force. The discs of the limpet and of the cuttle-fish attach themselves firmly to the surfaces to which they adhere, by being formed so as to act upon the principle of the common sucker used by the schoolboy to lift stones, &c.—viz., by removing, or rarefying as far as possible, the air placed between the attaching and attached body, and thus taking advantage of the great power exercised by pressure of the atmosphere upon the surfaces of solids. This pressure is, as is well known to all, equal to nearly fifteen pounds upon the square inch when the subjacent vacuum is perfect; or, in other words, it would require a force equal to fifteen pounds of every square inch attached, to effect the separation of surfaces thus united. The limpet and cuttle-fish have the surface of the acetabula or discs with which they fix themselves so strongly upon the rocks, bedowed with a thick mucous secretion; after placing the surface of the disc upon the part to which they are to attach themselves, they, by a muscular movement, raise the centre of the disc so as to produce a more or less perfect vacuum; and the cuttle-fish has a central body in the middle of each disc, which it draws up and uses for this purpose, exactly on the principle of the piston of a syringe.

Such an arrangement and apparatus may be imitated by art; and, when rendered more perfect and complete, may perhaps give us a simpler and safer obstetric power for some cases than even the forceps. In one protracted case which Dr. Simpson described, he had lately made use of this power to extract the child. When applied, the head was still high up in the pelvic cavity, and the instrument easily afforded such a hold of the head as to allow it to be slowly dragged forwards and extracted. During this extraction, the instrument required to be reapplied once or twice. Dr. Duncan and Mr. Dickson were present at the delivery.

The instrument used in this case was very rude and imperfect. It consisted of a common metallic vaginal speculum, fitted with a piston, and with the edge of the trumpet-shaped concave disc at its outer or broader end covered with leather. This broader and leathered end was coated with lard, and applied to the head of the child; and then an exhausting effect was produced by moving the piston forwards. The apparatus would admit of much improvement and simplification, as by the mouth of it being made expansible, and capable of altering in shape, instead of metallic and fixed; by the inner edge of it being coated, as in atmospheric railways, by a thin layer or cushion of air enclosed in caoutchouc; by the exhausting apparatus being valved and more perfect, &c. &c.* But if the Air-tractor could not be made both simple and satisfactory in its application, it would not replace the forceps, and more experience would be required to decide whether it had any title to do so.

If the instrument, when properly constructed, should be found to succeed, it would be still more advantageous in replacing the long, than in replacing the short forceps. In the case in which it was used, the head was of the height in which long forceps are usually required. If a suctorial tractor should answer in some long forceps cases, and enable us to drag with sufficient force upon the exposed portion of the scalp, it would save the danger dreaded by many, of wounding the uterus by introducing and working the blades of so long an instrument as the long forceps high up in the neck and cavity of the uterus itself.

Presentations of the breech sometimes require instrumental assistance. The hook passed over the flexure of the thigh is dangerous, and very apt to injure. The forceps, as recommended in these presentations by some authorities, are often inapplicable and inefficient. Perhaps the Air-tractor may afford us a new and sufficient instrumental force for the management of some of these cases. Its use would be simpler and safer than any of the other methods proposed.

Dr. Simpson further observed, that he was not aware that any one had applied practically this obstetric means, before it was employed in the case detailed to the Society. But the idea of using such a power had been long ago proposed by a gentleman, for whose works and talents they all entertained the utmost respect—Dr. Arnott, of London. In his admirable work on Physics, (p. 636) Dr. Arnott alludes to the subject in the following words: "The forceps (says he) to be well and safely used, requires address, which even the naturally dexterous man cannot possess without a degree of continued practical familiarity with it; and, except in large towns, a man must be unfortunate in his practice who often requires it; hence the really small number of persons who use it well. A tractor of three inches in diameter would act upon any body, to lift or draw it, with a force of about a hundred pounds—with more, therefore, than is ever required or allowable in obstetric practice. In lifting a stone, the tractor does not act as if it were glued or nailed to the stone, but merely heats or takes off the atmospheric pressure from one part, and allows the pressure on the opposite side, not then counterbalanced, to push the stone in the direction of the tractor; so when placed upon the child's head, it would not pull by the skin, in the manner of a very strong adhesive plaster applied there, as uninformed persons would be apt to suppose; but by taking off a certain atmospheric pressure on the other side or behind to urge the head forward on its way. Of course the pressure in such a case would not operate on the head directly, but through the intervening parietes and contents of the abdomen. It would be preferable to have a gentle and diffused action of the tractor over a large space, rather than an intense action on a small space; and, therefore, a tractor for the purpose now contemplated should not be very small, and should have a little air underneath it in a slight depression or cavity at its centre. The forceps must be more effective than the tractor for rectifying malposition of the head, and diminishing its transverse diameter; but the tractor will answer both these purposes in a greater degree than might at first be expected.

In conclusion, Dr. Simpson stated that he had now used the Air-tractor which he had constructed in several cases of labour, and with results answering his best expectations. But it doubtlessly admitted of much further improvement in construction, in mode of application, in working, and other details.—*Proceedings of Edinburgh Obstetric Society, 20th December*, 1848.

* Since the preceding abstract was drawn up, I have made a great variety of experiments, with the view of ascertaining the best form of disc or mouthpiece and exhauster. I find that a syringe and piston, valved like the common breast-pump, so as to make a perfect vacuum, and having a disc attached to it formed of a double cup, the outer cup of caoutchouc, and overlapping considerably the edges of an inner and smaller cup of metal or gutta-percha, makes an Air-tractor possessed apparently of the necessary applicability, and requisite adhesive and extractive power.—J. Y. S.

Case of a succession of monstrous births occuring in the same female. Extract of a letter to Professor DUNGLISON, *from* DR. J. MARTIN, *dated*—PHILADELPHIA, DEC. 4TH, 1848.—I will cite the cases of monstrosity occuring in a lady with whom I have been well acquainted for about fourteen years. Previous to that time she gave birth to two well formed and well featured children, I attended her in the first case of monstrosity. At the period of my earliest acquaintance with her, she moved in the middle walks of society, and had enjoyed good health up to that time. She was well developed in figure, and gave birth to a child perfectly formed in every respect with the exception of its head and face. The eyes were placed at the top of the forehead, and all the superior and posterior parts of the head were deficient, the corresponding bones of the cranium being wanting, and the opening fringed round with something very like liver. Her labour was attended with no difficulty; but the liquor amnii was very abundant, and the child was still-born. She had a speedy recovery.

In about eighteen months after this she gave birth to another child which was properly developed as to face and head, but the flexor muscles of the legs and arms were in fault; I could not straighten its legs, arms, fingers, or toes, owing to the flexors being too short. Her labour, this time, was not so easy, in consequence of the arms being flexed on the breast, and the hands below the chin; yet it was not attended with much difficulty, and the liquor amnii was again abundant.

The next two confinements were similar to the first I have detailed, in every respect, the monstrosity being the same; from both she had a speedy recovery.

At the next, (in the winter of 1843–4,) I was not present, being in attendance on the medical lectures in Philadelphia, but I understood that the labour was not accompanied with more severity than is common to woman; the child was defective on the top of the head, and the liver-like growth was there as in the other cases.

In 1846 she was confined again, and I was summoned to watch over her difficulties during her labour. She was in great hope that she would have a perfect child, being led to this conclusion by the strong movements of the child *in utero*. During the labour the os tincæ dilated rather reluctantly; but when dilatation did occur and the membranes were ruptured, a great discharge of liquor amnii took place, and I was enabled to discover that the head was defective while it was still at the superior strait. The deficiency was the same as in the other instances, but it was born alive and lived about three hours, and moved and made considerable muscular exertion. There was haemorrhage from the liver-like production on the top of the head. This child assumed a cerulean hue, becoming more livid from the moment of its birth till its death. The lady recovered rapidly.

The last misfortune was in 1847, when she had a miscarriage; the embryo was about two inches in length, and the defect at the top of the head could be very readily discovered.

Here then, are five cases of mature labour, the products of which were all defective at the top of the cranium. One carried to the full term and defective in the flexor muscles, and one abortion, in which the embryo exhibited the same defect at the upper portion of the cranium, and all occuring in the same female apparently in the enjoyment of perfect health.

MISCELLANEOUS.

GENERAL AND MEDICAL INTELLIGENCE.

Action of Lobelia.—According to the Boston Thompsonian Manual, Lobelia acts by suddenly evolving a large amount of electric fluid which it contains. "Fas est et ab hoste docori;"

and we are thankful for this piece of information, and cannot but applaud James S. Olcotts' ingenuity. Doubtless "his communication will prove of advantage to practitioners." It is copied into No. 2 of the *Unfettered Canadian*, with a host of similar trash. The learned editor of that sapient journal, which is destined to effect a wondrous revolution in medical matters in Canada, is, we learn, one of the late conductors of the Brockville Academy. He conceives that his knowledge of the rudiments of the English language, eminently qualifies him for an intuitive perception of the errors of medical practice, and he relinquishes the former ignominious pursuit, to spend his prowess and powers on a more noble theme! Don Quixote never undertook a more glorious crusade; S. Gregory, of this city, appears to be his Sancho Panza. We only hope he may not be tossed in a blanket, as his prototype of old was.——Dr. Huston, who has for so many years so ably managed the *Medical Examiner*, of Philadelphia, has retired from the editorial chair, which is worthily supplied by Drs. F. G. Smith, and D. H. Tucker, both most favorably known to medical literature. We do not doubt the continued success of the journal.——A physician of Pulaski co., Illinois, has been sentenced to the Penitentiary for the term of 4½ years, for having inoculated a man with the small-pox virus, from the effects of which he died. Just as it should be. The offence is a penal one in England by Act of Parliament.——There is a man in Vermont having one leg, and he has three sons all born in the same condition.——Twins are exhibiting at St. Louis, born on the 16th Dec., 1847. They are connected from the breast bone and sternum to the umbilicus, measure 20 inches in height, and weigh 20 lbs. They stand face to face, and are otherwise perfect.——The cholera has broken out at Brownsville, Texas, carrying off 8 or 10 a day out of a population of 700.——Prof. Simpson has been employing light coal naphtha as an anæsthetic, and finds it successful; its vapor is not so agreeable as that of chloroform, but it costs infinitely less, not exceeding one penny per ounce. The chloride of olefiant gas has also been brought forward by Mr. Nunnely.——Ship fever is beginning to reappear among the emigrants who arrive at the Southern ports.——Cholera is again creeping up the rivers of the West, from New Orleans.——The Natural History of New York will cost, when completed, about $76,000.——Dr. Carter, of Boston, and Dr. Robinson, of the same city, have both effected improvemen, the former in a silk bedstead, the latter in a pessary, of both of which the *Boston Medical Journal* speaks favorably.——Dr. Dill, of Dundas, C.W., who a few years ago practised in Quebec, and whose arrest on suspicion of the murder of a man missing from the former neighbourhood, we noticed some time ago, and against whom complete evidence was wanting to secure conviction, has been lately arrested on a charge of rape, committed on a young woman whom he was attending as a patient. His trial was fixed for the 26th April. He is certainly securing for himself a peculiar kind of notoriety. If convicted of this, we hope he will be punished in the most summary manner.——"An important decision was recently made by the Supreme Court of Ohio, with reference to the rights and privileges of medical students and the schools of medicine in that State. Students of the Eclectic Medical Institute (a Thompsonian affair) sought admission into the Commercial Hospital, in Cincinnati, upon equal terms with those of the Ohio Medical College, but the judge decided that they could not be so admitted."—*Boston Med. Jour.*

THE

British American Journal.

MONTREAL, MAY 1, 1849.

MEDICAL REFEREES AND ASSURANCE OFFICES.

We publish the following Resolutions of a numerous and influential meeting of the Profession in this City, held in the rooms of the Medico-Chirurgical Society, on the 16th instant, on the subject of fees to private referees. The Members of the Profession here have now taken a firm stand, from which there will be no retrogression on their part. We hope our brethren in the sister cities will adopt analogous resolutions, and insist upon the acknowledgment of their just "rights" in the same manner:

The relative position of Patient and Physician has always been considered, and in truth is one of peculiar delicacy, as well as of the most confidential nature, and no Physician can divulge any circumstances entrusted to his knowledge without incurring the just odium, not only of his patient and of his professional brethren, but also that of the community at large,—

Resolved, 1. That in the case of a patient referring any Assurance Company to his former or present medical attendant for his opinion, it being recognised that such medical opinion is sought for by the Company, with the concurrence of the patient, all such opinions should be perfectly unbiassed, and the information thus obtained by the Company should be considered strictly confidential.

2. That in the opinion of the undersigned, the tendering of a fee, under these circumstance, is but a simple "act of justice" towards the private Referee, and as the information thus derived by the Assurance Companies is of the most essential advantage to them, such fee should be paid by the Companies at the time of proposing the enquiries, and should be of the same amount as that paid to their own Referee.

3. That copies of the foregoing Resolutions be transmitted to the Agencies of the different Assurance Companies in this City.

D. Arnoldi, M.D.	Wm. Sutherland, M.D.
Js. Crawford, M.D.	Robt. Godfrey, M.D.
Geo. W. Campbell, M.D.	Matthew P. Burns.
Arthur Fisher, M.D.	A. H. David, M.D.
W. Fraser, M.D.	Hector Peltier, M.D.
Francis Badgley, M.D.	M. McCulloch, M.D.
Louis Boyer, M.D.	Pierre Davignon.
R. L. MacDonnell, M.D.	Wolf. Nelson, M.D.
J. L. Leprohon, M.D.	A. F. Holmes, M.D.
Francis C. T. Arnoldi, M.D.	O. T. Bruneau, M.D.
William D'Eschambault.	L. F. Tavernier.
Henry Howard, M.D.	J. G. Bibaud, M.D.
A. Hall, M.D.	A. E. Regnier,
W. E. Scott, M.D.	J. Emery Coderre.
Saml. B. Schmidt, M.D.	Hy. Mount, M.R.C.S.L.
George D. Gibb, M.D.	Frederick Morson, M.R.C.S.L.

MIDWIVES LICENSED BY THE COLLEGE OF PHYSICIANS AND SURGEONS SINCE THE FIRST DECEMBER LAST.

Mrs. Jane Gibson,.....of Chambly.
" Margaret Reid,.....of Montreal.
Madame Etienne Bellingé,..... do.
" François Bellaire,..... do.
" Jean Marie Beauchamp,..... do.
" Jean Bte. Tessier dit Lavigne,.... do.
" Olivier Gagné,..... do.
Mrs. Jane Christie,..... do.

The last mentioned has been for many years Matron to the Montreal Lying-in-Hospital.

FRANCIS C. T. ARNOLDI, M.D.,
Registrar and Treasurer.

Montreal, 26th April, 1849.

Counter-Petition to the House from the District of Montreal.—Since the publication of our last issue, the following gentlemen have sent in their adhesion to the petition in opposition to the scheme of the Repeal Association. The number for the District of Montreal is now 95; that for the City of Quebec, 29; in all 124.

We have already published the names of 63 for this district. Will the Repeal Association now say that they express the sentiments of the Profession?

Francis W. Sheriff, M.D.	Hy. T. Lord,
M. S. Glines, M.D.	Jos. S. Brigham, M.D.
Uriah Laflin,	Ab. Dy. Kernan,
B. R. Jamieson,	J. B. Barber,
Remi H. D'Amour,	D. B. Delisle,
W. H. Fowler, M.D.	Thos. W. Jones, M.D.
Stephen M'Donald,	W. Winder, M.D.
Wm. H. White,	Jos. Chamberlin, M.D.
James O'Leary,	R. Godfrey, M.D.
Wm. Spry, M.R.C.S.L.	Jas. R. Cowan,
Jos. H. O'Leary,	Fred. S. Verity,
Samuel David,	William Stewart,
J. G. Whitcomb, M.D.	—— Browne,
W. O. Dunn, M.D.	—— Livingston,
Stebbing Revans,	Seraphin Gauthier.
P. W. Dease, M.D.	E. W. Carter.
C. A. Campbell, M.D	T. Christie, M.D.

Destruction by Fire of the Provincial Libraries and Public Records.—This journal meddles not with Politics; but it is with sincere regret that we announce the destruction by fire of the Parliament buildings, its two valuable Libraries which money cannot replace, and all the Public Records of the Province, on the evening of the 25th April. Resulting from this, it is more than probable that nothing will be done in Medical matters this year. Indeed, it is very questionable whether the Legislature will continue much longer in Session. We have to state, however, that the Counter-Petition was presented by Dr. Davignon, and that the amendments to the Act of Incorporation were to have been proposed by Dr. Nelson that very evening. It was our intention to have entered into an examination of the merits of Dr. Parker's petition to the House, regarding his summary dismissal from the office of Superintendent of the Lunatic Asylum, Toronto, and to have noticed several other matters, had the event alluded to not transpired. The occurrences of that evening will be matters of history. We simply chronicle the fact without entering in the slightest degree into its causes, which will furnish material for the political journals.

The Cholera.—In Glasgow the number of deaths between November 14 and March 22, was 8107, of which 3777 were from Cholera. In Limerick the disease was subsiding. In Paris the disease has broken out, and was spreading through the city; up to 3rd April, 852 cases had occurred, and 481 deaths. The disease does not appear to spread so rapidly as in 1832, and its symptoms were more modified. The disease, however, is equally intractable. In the Parisian hospitals, where the best medical assistance was obtained, the mortality was about 50 per cent., the same as among the Uralian Provinces of the Russian Empire, where the medical attendance was not so efficient. In the Parisian hospitals several nurses had been attacked, and Professor Fourquier had been seized with symptoms of the disease.

Lectures on the Eye and Ear.—We beg to direct the attention of Medical Students to the course of Lectures on the above subject, by Dr. Howard, which will commence early this month. As Dr. Howard has devoted himself exclusively to these branches of his Profession since his residence in this City, and is familiar with his subject, we have little doubt that his lectures will prove of great utility, as they will be fully illustrated by reference to the numerous cases daily under his care in the Institution with which his name has been for the last three years favourably connected. This is the first attempt at Lectures of this description in Canada, and we hope that the opportunity will not be neglected by our young friends.—(See Advertisement.)

CORRESPONDENCE.

To the Editor of the British American Journal.

SIR,—In consequence of some remarks recently made in the leading articles of your paper, (particularly in its last number) I feel called on, for myself and others, to trouble you with a few observations. As I consider your space valuable, I shall be exceedingly brief.

I wish to draw the attention of your readers to the fact of your assuming to yourself and party, a position, to which, in reality, you have only at the utmost a much disputed claim, *i. e.*, you assert plainly that the College Governors represent, exclusively, the profession in Lower Canada.

Having taken this standing, on which, from the present aspect of affairs, I am inclined to doubt your ability to maintain your balance, you appear to affect contempt for the views of every other party, and to stigmatize every one who differs from your views, as to the best mode of raising the professional standard in the Province, as being actuated by personal and unworthy motives.

Now, Sir, allow me to say I believe yourself and many others of your party are quite sincere in their endeavours to further the interests of the profession, but I do not consider your views are sufficiently liberal to effect the end proposed. I have, therefore, with others, who, I doubt not, have been moved by like considerations, adopted a somewhat different course in the same pursuit.

Had we petitioned the Legislature to erase from its statutes all support to the profession, your observations would have been just, but when you, and every one, allow that the present Act is incomplete, and in some of its provisions or omissions unjust, what ground have you to accuse us so bitterly of unprofessional conduct in endeavouring to get the law rendered more perfect? What is the use of it in its present state? Is it not inoperative? Your own party, I am well aware, consider some amendments, at least, to the present Act, urgently called for; would it not, consequently, be wiser, and, therefore, better to join us in a united appeal to the Legislature to introduce a more perfect bill?

In conclusion, I would beg to suggest to you, the propriety, in future, of treating us with the same consideration we are inclined to show you; for, depend on it, bigotry in any cause is only calculated to injure the interests it professes to uphold; and, moreover, I believe no question ever gained ground, having vituperation alone, instead of argument, to support it. I remain, Sir,

Your obedient servant,

F. D. GILBERT.

Hatley, April 11, 1849.

"ET TU, BRUTE!"

Our pages being for the profession, and desirous that they should contain an exposition of the views of its members, how opposite soever they may be, we

insert Dr. Gilbert's letter, although directed against ourselves.

We certainly agree with Dr. Gilbert, that differences may exist in the methods employed to work out desired and laudable ends, and that courtesy should be exhibited towards those who may differ from us, upon the assumption that a good object is to be secured, and that those who differ from us, are actuated by good motives. All this is correct and proper. But when we look at the object sought to be attained by the Repeal Association, with which, we regret to perceive, that Dr. G. has allied himself; when we observe their plan and their scheme embodied in the shape of a proposed Legislative enactment, and when, without pretending to the gifts of a seer, we foresee professional education wrecked by the measure, and, as a certain consequence, a race of half-educated men ushered into existence, we claim the right of questioning the conduct of such parties, and of denouncing them and their proceedings in befitting terms.

In one respect Dr. G. is grievously mistaken. We challenge him to the proof of our having employed towards the Repeal Association vituperative epithets. When we first alluded to the Association and its proceedings, scarcely dreaming that they were serious in their endeavours to crush the Act of Incorporation, we treated them with ridicule; but when their measure assumed a tangible form and shape, we deemed it our duty to expose the education, professional and otherwise, of some of the party who thus wanted to upturn existing matters, to demonstrate the value which should attach to their opinions on a question of such supreme importance. We stated a fact or facts, susceptible of the strongest confirmation; and if this is vituperation, we know not the meaning of the term.

That the present Act of Incorporation requires amendments, we have admitted on more than one occasion, and Dr. Nelson has intimated to the House his intention to move them at an early period. These amendments have chiefly reference to the admission of every member of the profession to the Incorporation, upon their complying with the by-laws which govern the present members; to an alteration in the mode of representation, affixing a determinate number to specific districts, *e. g.*, seven for the city of Montreal, three for the Eastern Townships, and five for the country Districts of Montreal, not comprised within the Eastern Townships; three for the District of Three Rivers, and three for the District of St. Francis: seven for the city of Quebec, six for the country District of Quebec, and two for the District of Gaspé: to the admission of American graduates of fifteen years practice and residence in particular localities, under certain circumstances, and to alterations of the penalty clause, rendering it more effective. Such are the principal amendments to be proposed. In this country but two objects are to be secured by Legislative enactments for the profession; the one, a professional education as complete as possible, by enforcing a high standard of attainment on the student; the other, his subsequent protection as a licentiate. With regard to the first, the present Act is every thing which a person desirous of seeing his profession occupy a proud position of honour and usefulness, flowing from professional accomplishments, could possibly desire. Does the proposal of the Repeal Association, in this matter of supreme importance, effect as much? It does not; and that it *does not*, we will prove by comparing the educational clauses of the present Act with those of the proposed substitute.

Educational Clauses from the Act now in force.

"And be it enacted, That the qualifications to be required from a candidate for examination, to obtain a certificate for a license to practise, shall consist in his not being less than 21 years of age; that he has followed his studies uninterruptedly during a period of not less than four years under the care of one or more general practitioners duly licensed, and that during the said four years, he shall have attended at some University, College, or Incorporated School of Medicine, within Her Majesty's dominions, not less than two six months' courses of General Anatomy and Physiology, of Practical Anatomy, of Surgery, of Practice of Medicine, of Midwifery, of Chemistry, and of Materia Medica and Pharmacy, one six months' course of the Institutes of Medicine, one three months' course of Medical Jurisprudence, and one three months' course of Botany, if obtainable in Lower Canada; also, that he shall have attended the general practice of an hospital in which are contained not less than fifty beds, under the charge of not less than two physicians or surgeons, for a period of not less than one year, or two periods of not less than six months each; and that he shall also have attended two three months, or one six months' course of Clinical Medicine, and the same of Clinical Surgery."

Educational Clauses of the Proposed Substitute.

"3 Every candidate who shall present himself to obtain a certificate of admission to the practice of medicine, must have attained the age of 21 years, and must have studied during, at least, four years, with one or more physicians duly authorised to practise medicine in all its branches; he must have obtained from one of the Board of Examiners, hereinafter established, certificates of qualification, of sufficient acquaintance with the different branches of the medical sciences, after having submitted to annual examinations before one of the said Board of Examiners on Materia Medica, Pharmacy, and Botany; Anatomy, Physiology, and Chemistry; Practice of Medicine and Therapeutics; Surgery, Midwifery, and Legal Medicine; he must have followed the general practice of an hospital, which should contain about 50 beds, during one year, or during two periods of six months each; the said hospital to be under the charge of, at least, two physicians, one practising, the other consulting, and he must also have followed a course of Clinical Medicine and Surgery during six months, or two courses of three months each."

"4. Every student must present himself before one of the said Boards of Examiners, at the end of each year of his medical studies; the first year to submit to his examination in Materia Medica, Pharmacy, and Botany; the second year, on Anatomy, Physiology, and Chemistry; the third year, on practice of Medicine and Therapeutics; the fourth year, on Surgery, Midwifery, and Legal Medicine; and he shall not be admitted to his second examination without having obtained a certificate of qualification from his first, and so on, for the third and fourth examinations: Provided always, that should it happen that the said student shall have been rejected at his annual examination, it shall be allowable to him to present himself before the Board at its

next meeting, to obtain the said certificate; and on these certificates he shall have the right to submit himself to a general examination before one of the said Boards on the different branches of medicine before mentioned, and after such examination, shall, if found qualified, receive a certificate of admission to the practice of medicine."

"5. Every candidate, who shall have obtained, during the period of his four years of apprenticeship, a certificate, or certificates of qualification from a College, or School of Medicine, after having followed a complete course in each branch of medical science before mentioned: Provided always, that a course on Botany is obtainable in Lower Canada, on such certificate or certificates the said candidate shall have the right of being admitted to a general examination, as expressed in the present Bill, before one of the said Boards, who shall be bound to deliver him a certificate of admission to the practice of medicine, should he be found qualified."

The preamble of the proposed Bill states, that the intention is "to place the medical profession on a *more respectable* footing, and to better regulate the *study* and practice of medicine, &c." We now ask any dispassionate reader, to say whether such an object is at all likely to be secured by such a proposal? To say the best of it, it is but half as effective as the plan secured by the present Act; and to exhibit the measure in its real deformity, as demonstrated in the first two of the quoted clauses, it would admit a student to practise without having touched a subject, or heard a lecture, except upon clinical medicine and surgery: and *this is the mode in which the profession is to be ameliorated!!* Dr. G. will excuse us from "joining their united appeal" for any such reform, which savours strongly, to our mind, of demolition. If Dr. G. can convince us that our views are erroneous, or that those of the Repeal Association are different from those in their published and overt proposal, we shall most cheerfully open our columns to him. We certainly are most "bigoted" in favour of any thing which will advance the interests of the profession, and most "bigoted" in our hostility to every measure which tends to destroy its integrity, and its usefulness.—Ed.]

DEBATE ON THE THOMPSONIAN BILL.

HOUSE OF ASSEMBLY

THURSDAY, April 5, 1849.

The order of the day for taking into consideration the report of the select committee on the petition of John H. Aussem (Botanic Medicine) being read,

Mr. Flint moved, that the said Report be now committed to a committee of the whole House:

Yeas:—Messieurs Armstrong, Badgley, Attorney General Baldwin; Beaubien, Solicitor General Blake, Boulton of Toronto, Burritt, Cauchon, Chabot, Chauveau, Christie, DeWitt, Dumas, Egan, Flint, Fournier, Gugy, Hincks, Holmes, Lemieux, Sir A. N. McNab, McConnell, Methot, Mongenais, Morrison, Notman, Price, Richards, Smith of Durham, Smith of Wentworth, Stevenson, Viger, and Wilson,—33.

Nays:—Messieurs Cartier, Davignon, Fortier, LaTerriere, Nelson, and Robinson,—6.

Mr. Flint moved that a bill should be brought in to accord to those who practised the Thompsonian system of medicine, the same rights as other medical men; they asked for equal rights but nothing more, they desired the privilege of receiving pay for their services, and if those services were valuable he could see no reason why they should not be paid. They used no mineral medicine, but only medicine made from roots and herbs, and practised on a different system from other medical men. All they wanted was to be allowed to practise as they thought proper, without studying three or four years at a system which they never intended to practise, in order to obtain a diploma. In the U. S. the Thompsonian doctors were allowed to practise and the same right should be accorded to them here, to enable them to give their system a fair trial. It might be said that persons practising this system had destroyed valuable lives—granted; but had not many valuable lives been also sacrificed by the regular physicians? The only difference was, that one sacrificed life contrary to law, the other according to law. (Hear, hear, and laughter.) It was said that "the grave reveals no secrets," but he believed that if it could, there would be many men found to have been killed by the regular physicians.—("No, no.")—He thought the majority of the regular physicians in Upper Canada were in favour of this right being accorded to the Thompsonians, and he could see no reason for refusing the bill he proposed. The system of persecution going on against this class of practitioners would raise them in public estimation; and, indeed, in many of the isolated parts of the country they did a great deal of good. He (Mr. Flint) was satisfied that the more this system was tried, the more it would prevail. He hoped the Committee would, therefore, allow him to bring in a bill to amend the law, so as to accord the petitioners the privileges they sought for.

Dr. NELSON said,—I trust the Committee will do me the justice to think, that I am not actuated by any personal motives in the opposition which I intend offering to the measure of my hon. friend, who has, with most unbecoming zeal, he will allow me to say, espoused the cause of the most dangerous class of men with which society here and elsewhere is beset and pestered. No; I am moved by far nobler motives. I wish to protect my fellow-man against the deception, the knavery, and the imminent hazard, to which he must be exposed at the hands of the "Thompsonians." I am also impelled to this course by the love I bear to a profession in which I have been engaged during half a century. I am further prompted to this step by those feelings of humanity which have not unfrequently been outraged by the practices of this nefarious tribe of empirics. What! are individuals, destitute of all medical instruction—of the merest rudiments of a science—and many of them grossly illiterate, to be allowed to trifle with the lives of beings created in the image of the Almighty? Are such creatures—(pardon the expression, but really language is insufficient to characterize those who revel thus with human existence, whose presumption is equalled only by their ignorance, and who, with all these qualities (!) have the hardihood to thrust themselves upon the community)—are such creatures, I say, to meet with countenance, support, and protection, from the Legislature of this country? Sir, I would have deemed it an insult to the good sense of every hon. gentleman in this House, to open my lips on this occasion—I would allow the hon. mover to be "all alone in his glory"—had not I been shocked and pained at the favor with which this scandalous measure was greeted a few evenings since; a feeling, I verily believe, that would not have been manifested, had not the Legislature of the neighbouring State of New York entertained a similar atrocious measure, and actually passed a law placing these personages on a footing with regularly-educated medical men. But if the Legislature of the "Empire State" can have been guilty of such an astounding absurdity, I see no reason why we should follow the baneful example. I greatly overrate the intelligence and the patriotism of the science-loving New Yorkers, if they do not, ere long, *erase from their statute-book an enactment* which the other State, for their honor and the advantage of society, have not, I believe, adopted.

Whilst we impose obligations of a most stringent nature on those who are desirous of entering upon the study of the time-honored profession of physic, you would, as if in mockery, at the very same moment, sweep away every barrier conducive to its protection and encouragement, and give free scope and unlimited license to Quacks, that they may perpetrate the most nefarious deeds upon a community, which must think it wise, after the example set them by this House, to put themselves under the care of these barefaced pretenders. On your heads be all the blame, the odium, the shame and dishonor, yea, and the responsibility, of turning loose to prey upon society, a class far more dangerous than the midnight assassin, because armed by the laws to sport in the work of death. The very idea curdles the blood, harrows up the soul, and cries out for vengeance!

My hon. friend has, with wonderful *bon homie*, said, "Give

these Thompsonians a trial—let them make their experiments—and then we shall see whether they or the regular practitioners meet with most success." Had not the hon. gentleman assumed such a tone of gravity, I would have thought him in a merry mood, and only desirous of letting off a little wit;—but no; he was in sober earnestness! He made the monstrous proposition after mature deliberation. I will respect the hon. gentleman's feelings, and my own position, else would I cover him with a flood of indignation. At this time of day to talk of the medical profession, and in this wise, reveals little elevation of thought. From the earliest ages, physicians have been known and esteemed more than a thousand years before the advent of *Christ*. As a science medicine was fostered and nurtured in the temple of *Æsculapius*, where were deposited marble tablets with the names and symptoms of diseases engraved thereon, together with the remedies proper to their removal. Nay; it was held to be a divine art—its votaries being chiefly priests. Thus has Pope aptly rendered Homer's words:—

> "A wise physician skilled in wounds to heal,
> Is more than armies to the public weal."

In ancient Assyria and Egypt, the profession was studied and honored, and many of the greatest philosophers of antiquity were engaged in its pursuits. And since the time of the deservedly-great *Hippocrates*, centuries before the coming of the Saviour, we trace its march, step by step, to its present state of perfection; and very many of the great names in modern history are found enrolled among the faculty—men renowned for their genius and research. And it is with all these facts before us, that in the 19th century—an era of progress and improvement in all the sciences—a set of ignorant and despicable pretenders are to be allowed, by lawgivers, to prey upon society, and sport with human life. Out upon such abominations! What do these individuals know of nature's laws? What do they know of the physiology of plants? They know not in what part reside the medicinal virtues of vegetables. Ask them whether such properties depend on a volatile or a fixed principle; by what process such properties are to be obtained, whether by infusion, decoction, or tincture. Why, they do not even know the difference which exists between these processes! Again, ask them at what season of the year the plant should be gathered—how it is to be prepared and preserved—and they are ignorant of all this, the very preliminaries; and if, peradventure, they hit upon a satisfactory result in their treatment, it is a matter of pure hazard. In fine, no class of persons can be more devoid of knowledge in science.

In all parts of the world, and at all times, the fraternity of empirics have been distinguished for their arrogance and daring, and to a man gross and deceitful. The most conspicuous of the *genus* was that extraordinary man *Paracelsus* dubbed "prince of Quacks." True, he was superior to his fellows in talent and education, and more bold and manly withal; nor, as others, a base hypocrite; for he dared to avow openly his sentiments in regard to religion and his faith. He would declare that "if *God* would not impart the secrets of Physic to man, it was not only allowable, but justifiable, to consult the Devil." He also boasted that "the very down on his bald pate had more knowledge than all the writers; the buckles of his shoes more learning than Galen and Avicenna; and his beard more experience than all the universities." He flourished about 500 years ago.

The poet has thus aptly described the mountebank of the present day:—

> "So modern empiricks, taught the art
> By Doctor's bills to play the Doctor's part;
> Bold in the practice of mistaken rule,
> Prescribe, apply, and call their masters fools!"

It is the boast of these audacious men, and they have but too much reason for it, that—

> "The dull world must honor pay to those,
> Who on their understanding most impose."

My hon. friend tells us that the tribe he would take under his protection cannot do much harm, as they "deal only in plants and roots." Good, easy soul, he is little aware that from herbs and plants we derive the most deadly and virulent poisons, for which there are no antidotes, and which too often cannot be detected, either by analysis or their pathological effects. He would also insinuate that vessels from the mineral kingdom are not of the domain of these persons. Why, it is an undoubted fact, that they buy Tartar Emetic by the pound, as well as Calomel! Their dupes are often subjected to distressing salivation. Now, we are in possession of no plant capable of inducing symptoms with genuine mercurial affections of the system. But we are told that there is one safeguard for the public—actions for mal-practice! Well, this is capping the climax with a vengeance! Who would willingly undertake to institute such proceedings? Great anxiety, loss of time and pecuniary sacrifices, would be but too probable a result, putting out of the question the possibility of a contra-prosecution for defamation of character. Those who employ these quacks *are conscious that they do wrong*. Should death supervene upon the treatment, the friends and relatives feel that the conviction of the offender would *reflect and cast reproach upon themselves*. Hence they contribute to stay any exposition, and screen from well-merited punishment the wretch who brought death and mourning into their families. Yes, Sir, the empiric is thus protected. The tale of his misdeeds is forever hushed in the grave. But, on the other hand, should the patient, from the innate vigour of his constitution, or other lucky circumstance, escape, it is trumpeted abroad as a *marvellous cure!* Now mark the very different way in which the licensed practitioner is dealt with. He has the power of compelling you to pay him for his services—you expect that he will work miracles. It is man's lot to die ultimately; and if the physician, despite the most judicious application of his talents, cannot arrest the behest of Providence, immediately he is blamed, censured, and even accused! Too often do his conscientious efforts meet with rebuke and ingratitude! Little, very little, does the generality of a mercenary world know the many and anxious hours which the physician experiences. He is called from his table, torn from his bed; alike wearied and oppressed, he must obey your imperative summons. And what appreciation is meted out in return for his privations and his efforts? His bill, always unwelcome, is greeted with a frown; it is paid, when at all, years after, and with a very *liberal* deduction! How enviable is his position! But the quack seems a fit object for your sympathies and favors! Let it not be said that I have presented an exaggerated picture of the subject. Would to Heaven it were so, and that I viewed the matter though a deceptive medium; but sad and long experience is my authority.

I reiterate my assertion, that the Quack is an audacious and not over-conscientious personage, not seldom immoral in his habits, and generally a canting hypocrite!

It has come to my personal knowledge, that at least two deaths have supervened in cases treated by Thompsonian impostors in this city. One was that of a delicate young lady, who had been advised to go to a watering-place, as her case was a state of mere debility; that she required change of scene, &c., &c. This wise counsel of one of our first medical men in this city was unheeded. There came a Thompsonian, who promised a speedy cure. In consequence of this, my friend was unceremoniously dismissed. The new attendant prescribed a "mild puke" of *lobelia*. A few minutes had scarce elapsed ere messengers were summoning all the physicians in the neighborhood to the young lady, who was said to be in extreme distress. Before their arrival she had ceased to live! The great exhaustion produced by the gentle "lobelia" had induced this fatal result. I could specify the other case, but will, in its stead, present to your notice a sketch of another achievement of the same "Doctor" of roots, herbs, and "hot drops." He kept a fine young girl, suffering from rheumatism, in a profuse perspiration for 24 hours. Then, "to warm the outside as he had done the inside," with his own hands he wiped her dry. It must be done "secundum artem!" *he alone could apply the "towel,"* and that, too, in a state of perfect nudity! Then he threw a gallon of the strongest whisky over her—(this was in the month of January.) The patient fell into a state of most dangerous collapse, to arouse her from which, required the assiduous application and administration of stimulants and diffusible *stimuli*. The ignorance of the charlatan in this case was most marked. He did not know that the use of the whisky was the most effectual means of producing a great degree of cold, by its rapid evaporation! And it is in the presence of such acts that they have the effrontery to ask us to legislate for them! and protect them in all their murderous deeds. It is true that complaints have been heard against the law at present regulating the study and the practice of Medicine in Canada, still it is a good law; but like every law and every thing human it has its defects and imperfections. Experience has shown us that it requires amendments, and I shall, ere long, propose such alterations as I

feel confident will meet with the approbation of all sensible practitioners and real friends to science and the well-being of society.

I call upon this House, as it values its honor, the well-being of society, and the individual happiness of its members, to reject this monstrous attempt to countenance and protect this dangerous class of persons. I call upon Ministers to vote against this unhallowed measure, or if they determine to support it, I beg them in the name of common decency, not to grant one farthing to any of the Medical Institutions in the country. It would be a mockery to devote a part of the public revenue to the support of Houses of Education, while you abet and foster presumption and ignorance. But I feel persuaded that members and the whole House will, on this occasion, "do their duty."

Dr. Davignon moved, amidst great uproar, that the Chairman do leave the Chair.

Messrs. Cauchon and M'Connell took the floor simultaneously to address the Chair, and remained standing for some time amidst great disturbance, and cries of "chair" and "dispense."

The Chairman having decided that Mr. M'Connell was up first, the hon. member proceeded to address the Committee, and bore testimony to the advantages of medicine composed of roots and herbs. We had, he said, a Liberal Ministry, who should endeavour to give equal rights and privileges to all men, and they should therefore give these Thompsonian doctors the privileges they petitioned for.

Mr. Flint said the difference between the regular practitioner and the quack was this, that the regular practioner treated his patients this way—

"He bleeds, he pukes, and he sweats him,
And if he dies, why then he lets him!"

whereas the Thompsonians—whom the hon. member for Richelieu called "quacks"—did not bleed in any cases. (Laughter.)

Dr. Davignon's motion was then carried by a very large majority, and the Committee rose.

BOOKS, &c., RECEIVED.

Obstetrics the Science and the Art. By Charles D. Meigs, M.D., Professor of Widwifery and the diseases of women and children, in Jefferson Medical College, Philadelphia, &c., &c. Lea & Blanchard. Philadelphia, 1849.

Clinical Midwifery. By Robert Lee, M.D., F.R.S. Philadelphia: Lee & Blanchard, 1849.

Manuel of Physiology. By W. S. Kirkes, M.D., assisted by J. Pagel. Philadelphia: Lea & Blanchard, 1849.

An Introduction to Practical Chemistry, including analysis. By John E. Bowman. Philadelphia: Lea & Blanchard, 1849.

A Practical Treatise on the Domestic Management, and most important diseases of advanced life. By G. E. Day, M.D. Philadelphia: Lea & Blanchard, 1849.

On the Cryptogamous Origin of Malarious and Epidemic Fevers. By J. R. Mitchell, A.M., M.D. Philadelphia: Lea & Blanchard, 1849.

The British Record of Obstetric Medicine and Surgery. Edited by Charles Clay, M.D., Manchester. Nos. 1 to 23, inclusive.

The Encyclopædia Obstetrica. By Charles Clay, M.D. Nos. 1 and 2.

Report No. 114, of the Select Committee, House of Representatives, on the petition of Mr. T. G. Morton, praying compensation from Congress for the Discovery of the Anæsthetic properties of Sulphuric Ether.

Anniversary Discourse before the New-York Academy of Medicine, Nov. 8, 1848. By James R. Murchy, M.D. New-York, 1849.

Lecture introductory to a course of Obstetrics, Nov. 5, 1848. By Gunning C. Bedford, M.D., Professor of Obstetrics and diseases of women and children, in the University of New-York, 1848.

Geological Survey of Canada. Report on the North Shore of Lake Huron. Montreal: Lovell & Gibson, 1849.

Dr. Stratford's paper has been received.

MONTHLY METEOROLOGICAL REGISTER AT MONTREAL FOR MARCH, 1849.

Date.	Thermometer.				Barometer.				Winds.			Weather.		
	7 A.M.	3 P.M.	10 P.M.	Mean.	7 A.M.	3 P.M.	10 P.M.	Mean	7 A.M.	Noon.	6 P.M.	7 A.M.	3 P.M.	10 P.M.
1,	+ 35	+34	+12	+34.5	30.00	30.02	30.26	30.09	S S W	S S W	S W	Rain	Fair	Fair
2,	" 8	" 23	" 10	15.5	30.31	30.22	30.20	30.24	W W	N W	N W	Fair	Fair	Fair
3,	" 5	" 25	" 13	" 15.–	30.24	30.26	30.26	30.25	N W	N W	N W	Fair	Fair	Fair
4,	" 3	" 28	" 14	" 15.5	30.38	30 35	30.32	30.35	N W	N W	N W	Fair	Fair	Fair
5,	" 11	" 33	" 19	" 22.–	30.37	30.29	30.25	30.30	N W	N W	N W	Fair	Fair	Fair
6,	" 16	" 39	" 31	" 27.5	30.26	30.04	29.88	30.06	N W	S S E	S S E	Fair	Cloudy	Sleet
7,	" 32	" 40	" 32	" 36.–	29.72	29.56	29.55	29.61	S	S	S	Snow	Rain	Fair
8,	" 31	" 40	" 32	" 35.5	29.58	29.65	29.70	29.64	W by N	N W	N W	Snow	Fair	Fair
9,	" 26	" 34	" 25	" 30.–	29.70	29.61	29.60	29.64	W N W	W N W	W N W	Fair	Fair	Fair
10,	" 25	" 32	" 19	" 28 5	29.62	29.56	29.48	29.55	W N W	W N W	W N W	Fair	Fair	Fair
11,	" 12	" 32	" 26	" 22.–	29.55	29.46	29.58	29.53	N W	W N W	W N W	Fair	Fair	Fair
12,	" 20	" 37	" 25	" 28.5	29.75	29.70	29.69	29 71	N W	N W	W	Fair	Fair	Fair
13,	" 23	" 41	" 34	" 32.–	29.72	29.71	29.80	29.74	W	W	W	Fair	Fair	Fair
14,	" 19	" 32	" 26	" 25.5	30.07	30.02	30.00	30.03	W	N W	N W	Fair	Fair	o'erc'st
15,	" 30	" 34	" 34	" 32.–	29.95	29.70	29.64	29.76	S S E	S E	S E	o'erc'st	Snow	Sleet
16,	" 49	" 47	" 34	" 48.–	29.65	29.47	29.49	29.54	S E	W by S	W by S	Foggy	Fair	Fair
17,	" 31	" 40	" 30	" 35.5	29.50	29.57	29.54	29.54	W by N	W by N	N W	Fair	Fair	Fair
18,	" 20	" 38	" 28	" 29.–	29.67	29.66	29.74	29.69	N W	S S W	S W	Fair	Fair	Fair
19,	" 21	" 37	" 30	" 29.–	29.94	29.92	29.88	29.91	S W	S S W	S S W	Fair	Fair	Snow
20,	" 35	" 45	" 41	" 40.–	29.70	29.42	29.30	29.47	S	S	S	Fair	Fair	Rain
21,	" 45	" 49	" 33	" 47.–	29.15	29.08	29.34	29.19	S	S	W	Rain	Rain	Snow
22,	" 19	" 29	" 18	" 24.–	29.80	29.92	30.05	29.92	N W	N W	W	Fair	Fair	Fair
23,	" 25	" 40	" 36	" 32.5	30.08	30.00	30.02	30.03	W	S	S	Fair	Fair	Rain
24,	" 32	" 42	" 31	" 37.–	30.05	30.10	30.12	30.09	N W	N	N N W	Snow	Fair	Fair
25,	" 19	" 39	" 36	" 29.–	29.89	29.58	29.64	29.70	E	S E	S E	Snow	Rain	o'erc'st
26,	" 29	" 34	" 28	" 31.5	29.84	29.90	29.93	29.89	W by N	W by N	W	Fair	Fair	Fair
27,	" 25	" 40	" 32	" 32.5	30.01	30.00	29.98	30.00	N	N	N	Fair	Fair	Cloudy
28,	" 31	" 41	" 35	" 36.–	29.98	29.92	29.95	29.95	N by W	W N W	N W	Fair	o'erc'st	Rain
29,	" 35	" 41	" 36	" 38.–	30.02	29 96	29.96	29.98	N by W	N N W	N N W	Fair	Rain	Fair
30,	" 37	" 52	" 42	" 44.5	29.96	29.85	29.78	29.86	N N W	W	W	Fair	Fair	o'erc'st
31,	" 38	" 58	" 36	" 48.–	29.72	29.56	29.69	29.66	W	W by N	W N W	Rain	Fair	Cloudy

Therm. { Max. Temp., +58° on the 31st
Min. " + 3° " 4th
Mean of the Month, +31.66

Barometer, { Maximum, 30.38 In. on the 4th
Minimum, 29.08 " 21st
Mean of Month, 29.836 Inches.

MONTHLY METEOROLOGICAL REGISTER AT H. M. [illegible]

Latitude 43°. 39′.4. *N.* *Longitude* 79°. 21′.5. *W.* *Elevation above Lake Ontario,* 108 *Feet.*—(*For the Brit. Amer. Jour. of Med. and Phys. Science.*)

Day.	Barometer at Temp. of 32°. 7 A.M.	3 P.M.	10 P.M.	Mean of 24 h.	Temperature of the Air. 7 A.M.	3 P.M.	10 P.M.	Mean of 24h	Tension of Vapour. 7 A.M.	3 P.M.	10 P.M.	Mean of 24h	Humidity of the Air. 7 A.M.	3 P.M.	10 P.M.	Mean of 24h	Wind. 7 A.M.	3 P.M.	10 P.M.	Rain in. on surf.	Weather.
1,	29.997	30.058	30.102	30.057	32.6°	25.0°	24.0°	27.8	.135	.125	.114	.127	.72	.92	.86	.82	N. N. W.	N.	N. by E.	.025	Partially clear, light cl'ds & haze generally. S'p m, halo round moon.
2,	30.052	29.953	29.981	30.001	19.6	26.2	24.8	23.2	.095	.130	.131	.115	.86	.89	.97	.90	N. E.	E.	Calm.	—	Mostly cl'ded. Cl'r spaces from 9 p m.
3,	30.074	30.076	30.069	30.076	15.5	25.9	21.0	20.7	.067	.111	.090	.091	.73	.78	.78	.79	N. by E.	S.	Calm.	—	Quite clear all day. Very fine.
4,	30.174	30.124	—	—	26.0	27.2	—	—	.113	.135	—	—	.78	.90	—	—	N. E.	E. by N.	——	—	Clear and unclouded. Very fine.
5,	30.007	29.895	29.840	29.912	28.4	32.1	33.4	31.2	.141	.165	.159	.153	.89	.92	.83	.87	E. N. E.	E. by N.	E.	—	Overcast, light clouds, and haze.
6,	29.731	29.617	29.462	29.602	33.0	34.1	36.0	34.5	.167	.185	.202	.183	.89	.95	.96	.92	E. by S.	E. by N.	Calm.	—	O'ct all day. Sl't rn fr 9 a m, to midn.
7,	29.543	29.548	29.699	29.593	35.7	41.4	33.0	36.6	.194	.140	.109	.148	.93	.55	.58	.69	Calm.	W.	N.W.byN.	.080	Cl'd till10am,rem of day m'ly cl'r. Fine.
8,	29.782	29.778	29.803	29.782	25.8	36.0	27.4	29.6	.124	.131	.118	.126	.87	.62	.78	.78	Calm.	W. by N.	Calm.	—	Passing cl'ds till 2 pm. Remndr of day clear. Very fine night.
9,	29.717	29.587	29.614	29.643	25.4	33.4	30.2	29.7	.119	.137	.138	.130	.85	.71	.82	.76	Calm.	S. S. W	N.W.byN.	—	Gen cl'd. Cl'r sp's. Halo r'd sun 10 am.
10,	29.651	29.574	29.559	29.588	24.0	38.4	29.4	29.7	.103	.186	.153	.134	.77	.79	.95	.79	Calm.	N. N. W.	Calm.	—	A few clouds am. Day clear. Fine.
11,	29.518	29.492	—	—	33.6	36.7	—	—	.161	.144	—	—	.83	.68	—	—	Calm.	S. by E.	——	—	Clouded am. A few light clouds pm.
12,	29.520	29.435	29.518	29.486	28.0	31.4	31.7	30.3	.134	.156	.151	.146	.87	.89	.84	.86	E. N. E.	E. N. E.	Calm.	—	Cl'd all day. Slight snow at 1 & 2 p m.
13,	29.586	29.663	29.737	29.658	32.2	41.0	34.6	35.5	.172	.205	.165	.180	.95	.81	.82	.88	Calm.	S. by W.	N.E.byN.	*	Cl'd till 1 pm. A few l't passing cl'ds 2 to 6 pm. Remainder clear.
14,	29.718	29.634	29.633	29.659	33.2	33.4	32.4	33.0	.148	.167	.177	.161	.78	.87	.96	.86	E N. E.	E. by N.	E. N. E.	—	O'ct all day. Sl't rn fr 2 pm till midnt.
15,	29.492	29.468	29.534	29.498	34.6	42.9	34.2	37.1	.196	.251	.177	.208	.98	.92	.91	.94	N. E. by E	S. S. W.	Calm.	.185	Sl't rain till noon. Light cl'ds till 6 pm. Clear from 9 pm.
16,	29.544	29.450	29.415	29.466	30.8	41.4	40.4	37.5	.156	.184	.146	.153	.91	.71	.58	.69	Calm.	S.W.by S.	W. by N.	.015	Clear till 6 pm. Light cl'ds from 9 pm.
17,	29.567	29.540	29.607	29.566	27.8	34.1	27.0	29.7	.120	.158	.117	.127	.78	.79	.77	.76	N.W.byN.	S.	Calm.	.050	Passing clouds till 6 pm. Afterwards clear. Auroral light 9 to midnight.
18,	29.717	29.661	—	—	30.7	38.4	—	—	.139	.183	—	—	.80	.79	—	—	Calm.	W. N. W.	——	—	Clear am. Light cl'ds pm. Fine day. Bright Aurora 9 pm to 1 am.
19,	29.916	29.754	29.622	29.763	24.6	37.4	33.8	31.8	.113	.138	.159	.133	.83	.62	.81	.73	Calm.	S. S. E.	Calm.	—	Partially clouded. Light passing cl'ds.
20,	29.386	29.105	28.969	29.158	37.4	39.0	42.1	39.4	.151	.220	.260	.211	.68	.93	.98	.87	Calm.	Calm.	Calm.	—	Dens. o'ct. Constant h't rn fr 9-15 am.
21,	28.904	29.177	29.471	29.189	42.0	38.0	28.2	35.8	.254	.149	.126	.176	.97	.65	.80	.81	S. S. W.	W. N. W.	N.W.by W	1.130	Ceased raining 5 am. Clouded all day.
22,	29.765	29.833	29.852	29.813	24.8	37.4	34.1	31.7	.108	.142	.160	.138	.79	.64	.80	.76	W. by N.	S. S. E.	S. E.	—	Day clear. Fine. A few cl'ds 6 & 7 am, and 9 to 11 pm.
23,	29.850	29.814	29.871	29.845	36.4	47.6	39.0	41.1	.179	.210	.202	.196	.84	.64	.86	.78	S.W.by S.	Calm.	Calm.	—	Cl'ds & haze all day. Spit. rn 9 to 11 pm
24,	29.947	29.948	29.760	29.882	32.8	38.2	32.0	34.4	.173	.189	.175	.179	.93	.82	.97	.91	Calm.	E. by S.	E.	nt ap †	Snowing till 9 am. Cl'd all day. Snowing slightly 9 pm.
25,	29.322	29.504	—	—	32.6	34.6	—	—	.156	.156	—	—	.86	.76	—	—	N.W.byW	W. N. W.	——	—	Ceased snowing 9 am. Clouded all day.
26,	29.827	29.886	29.911	29.871	30.0	32.6	24.0	28.6	.154	.148	.108	.132	.92	.79	.82	.82	Calm.	N.	N.	—	Mostly clear. Light cl'ds occasionally. Auroral light 9 to midnight.
27,	29.952	29.898	29.859	29.904	22.6	34.8	30.1	28.9	.099	.141	.124	.115	.80	.70	.74	.73	N by W	S.	N.	—	Generally clear. Light passing clouds.
28,	29.859	29.738	29.795	29.801	28.6	49.0	41.6	39.0	.110	.148	.162	.145	.69	.42	.62	.62	N.	N. by W.	Calm.	—	Generally cl'd. Occasional cl'r spaces.
29,	29.857	29.860	29.872	29.861	37.6	44.1	39.0	40.2	.217	.261	.218	.231	.97	.91	.93	.93	E.	Calm.	Calm.	.040	Very slight rain till 10 am. Clouded till 9 pm. Clear 10 & 11 pm.
30,	29.874	29.788	29.763	29.810	34.2	50.4	40.4	41.1	.185	.285	.213	.226	.95	.79	.86	.88	Calm.	S. W.	Calm.	—	Cl'r. Very fine day. Auroral streamers very perfect 9 to 11 pm.
31.	29.727	29.764	29.877	29.791	41.0	43.0	34.0	39.6	.180	.171	.124	.162	.70	.63	.63	.66	N.W.byN.	N.W.byN.	Calm.	—	Cl'ded till 1 pm. Rem. of day clear.
Mean	29.735	29.698	29.711	29.7138	30.32	37.34	32.51	33.24	.148	.172	0.155	.157	.85	.76	.82	.81	3.75 miles	8.45 miles	3.82 miles.	1.525	W pigeons seen 20th. Frogs first heard 28th. Ice cl'r from Toronto Bay 29th.

Highest Barometer, 30.174 on 4th, at 9 a.m. } Monthly
Lowest do. 28.902 on 21st, at 6 a.m. } Range 1.272
Highest Temperature, 53°.0 on 30th, at 5 p.m. } Monthly
Lowest do. .. 15°.1 on 3rd, at 7 a.m. } Range 37.9
Mean Max. Therm., 38.35—Mean Min. Therm., 27.03.
Mean Daily Range, .. 11°.33
Extreme Daily Range, 31°.6 from am to 5 pm, on 28th
Mean Temperature, 2 p.m, 37°56, } Diurnal Variation, 7°90.
" " 6 a.m. 29°66, }

Sum of the atmospheric currents resolved into the four Cardinal directions, in miles—

North.	West.	South.	East.
1782.99	1288.93	679.86	1240.32

Mean velocity of the Wind, 5.37 miles per hour.
Maximum velocity, 20.5 miles from 2 to 3 pm, on 31st
Most Windy Day, 14th.—Mean veloc per hour, 12.97 miles
Least do. 29th, " " 0.60
Mean Velocity, 3 p.m. 8.45 miles, } Diurnal Variation,
" " 11 p.m. 3.21 miles, } 5.24 miles.

Year.	Temperature. Mean.	Max.	Min.	Range.	No. Days.	Rain. Inches.	Winds.	Calms	Wind. Mean force.	Snow. Days.	Snow. Inch.
1840, ...	33.4°	68.6°	+ 9.2°	49.4°	8	1.640			0.51	8	
1841, ...	28.2	64.6	— 6.7	61.3	5	1.170	255	69	0.70	6	
1842, ...	36.3	70.3	+15.1	55.2	4	3.150	199	113	1.18	18	25.7
1843, ...	22.36	39.9	— 2.5	42.4	2	0.625	485	163	0.57	8	14.0
1844, ...	31.83	50.8	+ 9.6	41.2	8	2.470	364	260	0.66	8	2.8
1845, ...	35.68	59.8	" 6.6	53.2	5	Imperf't	444	154	0.30	5	2.3
1846, ...	33.43	49.6	" 7.8	41.8	9	1.965	333	236	0.71	6	4.2
1847, ...	26.25	43.9	" 5.4	38.5	5	0.860	522	126	0.45	6	9.7
1848, ...	23.68	61.6	" 0.0	61.6	5	1.220	477	171	0.37	2	2.3
1849, ...	33.24	53.0	"15.1	37.9	7	1.525	227	97			

The means are deduced from six observations daily, viz: 6 a.m, and 2 and 10 p.m, and 7 a.m, and 3 and 11 p.m.
Further explanatory notes will be found at the foot of all the Registers for 1845, 1846, 1847, and 1848.
Magnetic Disturbances.—March 18th, 16h to 19h, Gott. Slight 12′.6 of Declination.
* Snow in inches on surface—not appreciable on the 13th.—† 24th, 0.3; 25th, 2.0; Total, 2.3.

UNIVERSITY OF M'GILL COLLEGE.

FACULTY OF MEDICINE.

SUMMER SESSION.

The Summer Courses will commence on the second Monday of May, 1849.

Medical Jurisprudence, - - - - - - -	by Dr. Fraser.
Botany, . - - - - - - - - - - - - -	" Dr. Papineau.

A. F. HOLMES, MD. & P.
Secretary Med. Fac.

UNIVERSITY OF M'GILL COLLEGE CONVOCATION.

A CONVOCATION will be held in the HALL of the UNIVERSITY, on THURSDAY NEXT, the 3rd instant, at the hour of 3, P. M.

Graduates of the University of five years standing are Members of the Convocation.

JOSEPH ABBOTT, A. M.,
Registrar.

Montreal, May 1, 1849.

AYER'S CHERRY PECTORAL.

AN Anodyne Expectorant, prepared on the new plan of combining the isolated, active principles of medicine, in their purity: a plan which is found to give an energy and certainty of remedial effect far surpassing any other in use. The substances of which it is composed are those known to be most relied on for the relief of pulmonary disease, viz.: Morphine, Sanguinarine, Emetine, Tart. Ox. Antim. et Pot. Hydrocyanic Acid, Saccharum, Spt. and Aqua, combined so as perfectly to resist the action of time; and affording to physicians a compound of *free, permanent* hydrocyanic acid—a desideratum in medicine not hitherto obtained. Its formula has been published in this and other Medical Journals, and also submitted to some of the highest medical authorities in this country, among which are the Berkshire College of Medicine, Pittsfield, Mass.; Willoughby Medical College, Columbus, Ohio; Bowdoin Medical College, Brunswick, Me.; Vermont College of Medicine, Castleton, Vt.; Geneva Medical College, Geneva, N. Y., and also in manuscript to a large part of the medical faculty of the United States.

The attention of practitioners is respectfully solicited to this preparation, and it is confidently believed it will commend itself to their favour and confidence, having been found an invaluable remedy in treating the most obstinate as well as milder forms of pulmonary disease.

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QUEBEC SCHOOL OF MEDICINE.

THE course of LECTURES of this SCHOOL will open on the 15th MAY next, and will be delivered as follows:—

Midwifery, - - - - - - -	Dr. Painchaud.
Theory & Practice of Medicine,	Dr. Sewell.
Theory & Practice of Surgery, -	Dr. Fremont.
Medical Jurisprudence - - -	Dr. Bardy.
General & Practical Anatomy, -	Dr. Jackson.
Clinical Medicine, - - - -	Dr. Painchaud.
Clinical Surgery, - - - - -	Dr. Douglas.
Materia Medica, - - - - -	Dr. Nault.
Botany, - - - - - - - -	Dr. Bardy.
Chemistry, - - - - - - -	Mr. A. N. Aubin.

For the conditions, regulations and by-laws of the School, and for all other information, apply to the undersigned Secretary.

P. M. BARDY,
Secretary, Q. S. M

Quebec, February 16, 1849.

MONTREAL: Printed and Published for the Proprietor, by JOHN C. BECKET; Office, 211½ St. Paul Street; Residence, corner of Lagauchetiere and Alexander Streets.