

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

L'Institut a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- Coloured covers /
Couverture de couleur
- Covers damaged /
Couverture endommagée
- Covers restored and/or laminated /
Couverture restaurée et/ou pelliculée
- Cover title missing /
Le titre de couverture manque
- Coloured maps /
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) /
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations /
Planches et/ou illustrations en couleur
- Bound with other material /
Relié avec d'autres documents
- Only edition available /
Seule édition disponible
- Tight binding may cause shadows or distortion
along interior margin / La reliure serrée peut
causer de l'ombre ou de la distorsion le long de la
marge intérieure.
- Additional comments /
Commentaires supplémentaires:

Continuous pagination.

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated /
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies /
Qualité inégale de l'impression
- Includes supplementary materials /
Comprend du matériel supplémentaire
- Blank leaves added during restorations may
appear within the text. Whenever possible, these
have been omitted from scanning / Il se peut que
certaines pages blanches ajoutées lors d'une
restauration apparaissent dans le texte, mais,
lorsque cela était possible, ces pages n'ont pas
été numérisées.

BRITISH AMERICAN
MEDICAL & PHYSICAL JOURNAL.

VOL. VI.—No. 11.]

MARCH, 1851.

[NEW SERIES.

ART. LIII.—*Cancerous Tumour of the Neck, simulating Scrofula; Hypertrophy of the Spleen; Death; and Autopsy.* By GEORGE D. GIBB, M.D., L.R.C.S.I., Physician to the Montreal Dispensary, Member Parisian Medical Society, &c.

On the 14th February, 1850, Madame P—— called upon me for advice about her little boy aged 5½ years, with a tumour in his neck. His history was as follows:—When about three months old he had ascites, with œdema of the arms and chest, which, after a while, disappeared without treatment. His health continued good until he was two years of age, when he became very delicate and sickly. When about three and a half years old, he fell upon the pavement and struck the front part of his chest, fracturing the middle of the sternum, which some time after united, but with angular deformity, the projecting angle being considerable. He was at this time treated by an eminent surgeon, who recommended suspension of the body by the arms from the steps of a ladder, to correct the deformity, and at the same time put him upon tonic treatment. When about four years of age, a small tumor less than the size of a marble was noticed on the right side of the neck near the angle of the jaw; it commenced slowly to increase, and after the lapse of six months, attained the size of the yolk of an egg.

He was treated for it by as many as six or seven physicians, and had taken a large quantity of medicine from each, with the use of Iodine internally as well as locally, which his mother thinks re-

duced it a little in size, or kept it stationary for a time. It however has continued to grow up to the present time, and has assumed a large size. On the 1st January, 1850, he had an eruption about the face and head which turned into sores; and on the 14th February there were some red patches about the face, the remains of the sores.

Present Symptoms and Appearances.

—A tumour exists on the right side of the neck, proceeding from the parotidæan region, downwards towards the clavicle and extending in the direction of the shoulder. It approaches also the mesian line of the neck, and would appear to encroach slightly upon the larynx, but not extending within the lower jaw. The tumour forms a considerable prominence, and a number of small veins are running in different directions over its surface. On the left side of the neck the external jugular is very prominent; not so on the right side. Three or four small red patches are present on the right cheek and chin; the countenance is pale and flabby; the eyes prominent and full of expression; which, with the shape of the head, denote precocity of intellect. And the general appearance is what would be at once pronounced by an observer as scrofulous. On examining the tumour, however, we find that it is lobulated and divided into two portions—a superior and an inferior;—the former is partly anterior to the inferior at its lower part, and the latter extends outwards and downwards upon the neck towards the shoulder. The tumour is freely

moveable in every direction; the integuments are not at all adherent to its capsule; and the consistence of the tumour is that of scirrhus, as it is impossible to make any impression upon it by firm pressure, from its firm and hard character, and scarcely any pain is induced. The glands on the opposite side of the neck are not affected, nor are the glands in any other part of the body. The sternum is curved forward, and the chest anteriorly is prominent and rounded; in other words pigeon-breasted, said to be produced here by the occurrence of former fracture? The general health appears good; there is no perceptible lesion of any internal organ.

The child had been seen and carefully examined by my friend Dr. Wright; and we coincided in the opinion; as to the propriety of removing the tumour by the knife. The parents would not immediately consent to the operation, preferring to get further advice as to the expediency of this treatment.

I will here remark, that an operation was justifiable at this time, from the nature and character of the tumour;—its peculiarly fibrous hardness, which was opposed to its being scrofulous;—its great mobility and superficial situation over the deep cervical fascia;—its circumference being well defined;—none of the deeper structures of the neck being either adherent to, or engaged in the diseased mass;—and the patient's health being good without any internal complication, for after a careful examination of the thoracic and abdominal viscera, no lesion could be detected.

At a later period, however, one of the abdominal viscera became engaged, no doubt owing to the contamination of the circulating fluid by the malignant disease.*

On the 28th February I again saw the little fellow, and found the tumour very slightly increased in size. He was suffering from diarrhoea, for which I prescribed some powders. The parents had not made up their minds as to what they should do, as they said other gentlemen whom they had seen had declared an operation inadmissible.

On the 5th March the tumour appeared to be still further increasing, and spreading in a direction downwards and inwards.

On 15th May, for the first time, he began to complain of pain in the abdomen, and on examination a hard body was felt, roughened or tuberculated on the surface, extending from the superior part of the left lumbar, towards the middle of the umbilical region, and which proved to be hypertrophy of the spleen. The liver was of normal dimensions, and the kidneys were healthy as the urine presented nothing unusual. From this time to the 28th June the tumour kept slowly increasing in size and extending in a direction further upwards and downwards, becoming more adherent near the angle of the jaw, and pushing the head towards the left side. He suffered at times from spasmodic cough, with occasional fits of dyspnoea, expectoration of frothy mucus, and a dislike to have any thing around his neck. He, however, ate well and slept comfortably.

During the months of July and August nothing material was noticed in the progress of the case, excepting visible increase in the size of the tumour, and further enlargement of the spleen. He did not suffer from any pain, but his cough was much more troublesome, requiring special treatment. On the 2nd September he complained of pain in his

where he has shown the contamination of the blood in that disease, and has given a microscopical analysis of the blood in ten cases.

* This fact is supported by the observations of Heller, in his "Pathological Chemistry of Cancer,"

stomach and legs; inability to lie on his left side, producing a sensation of choking. He at this time also had frequent and severe fits of dyspnœa, almost amounting to suffocation; he had alternate chills and flushings; he was still able to sit at the door although very weak, and was up till within two days of his death. Many of the symptoms mentioned, continued to recur with the addition of œdema of the hands and arms, and dysphagia. On the day previous to death, he was seized with symptoms of choking, with congestion of the face and neck; and the dyspnœa was so great, that the Surgeon who was called in wanted to perform tracheotomy, which the parents would not consent to. He continued to get worse, and died at 7½, A.M., on the 19th September, without a convulsive movement, carphology however existing a few hours before death.

Autopsy on 20th, 33 hours after death, assisted by my friends Drs. Pel-tier and Fenwick.

External Appearances.—Colour of skin almost that of marble, perfectly blanched and smooth; rigor mortis slight in degree; tumour in neck very much sunken, and apparently diminished in bulk; extremities only emaciated.

Tumour.—On making an incision several inches long through the skin in the long axis of the tumour, it was found that it was not adherent to it, throughout any part of its circumference. It, the tumour, was moveable, but was firmly bound down to the deep cervical fascia. It was formed from an apparently enlarged gland, with others also enlarged attached to it like bundles of grapes, and extending upwards under the lower jaw, forwards and inwards towards the mesial line of the neck, one lobule pressing rather firmly against the middle of the trachea.

others extended backwards, and the bulk of them downwards towards the base of the neck and within the clavicle. On carefully dissecting away the greater part of this diseased mass, the attachments posteriorly and below were found very persistent, and required some effort to remove with care. The subclavian vein was pushed forwards, and the inferior part of the tumour lay immediately over the sac of the pleura. The sheath of the common carotid was pressed upon; and on dissecting the base of this tumour, the phrenic nerve seemed to emerge from almost the substance of a part of the tumour itself. The mass as a whole weighed about two lbs. On making a section through the centre of the tumour, it was with some difficulty that the scalpel could be made to cut, so hard and fibro-cartilaginous was its nature; the glandular appearance did not exist, but was replaced by what resembled true scirrhus, both in texture and consistence and in general appearance. The smaller appendages to this mass were not quite so hard on section, but no tuberculous substance was seen; nor in fact did a single gland that was examined present any serofulous characters.

The *Microscope* here proved a great auxiliary in clearing up the true character of this tumour. Portions from the large scirrhus mass, presented a well marked fibrous structure, the fibres partaking of rectilinear arrangement; between these appeared round cells and molecular granules, some of the former nucleated and some fusiform, not distinctly caudate, but possessing one or more nuclei, with an occasional nucleolus. The fibres were in parts interlaced with one another in one portion under examination, with small nucleated cells in the meshes. There was a little juicy exudation from the section of

the tumour, but a very few cells were free on the field of the microscope. The smaller appendages of the large tumour, presented nothing marked from the ordinary glandular structure.

Thorax.—The angular curvature of the sternum outwards was particularly striking. The lungs, bronchi, and pleurae were perfectly healthy; three ounces of dark straw coloured serum were present in the cavity of the right pleura, and about an ounce in that of the left. The pericardium contained two ounces of serum, and was together with the heart quite healthy. No abnormalities either in form or texture in any of the great vessels arising from the heart.

Abdomen.—On pushing aside the small intestines, the *spleen* enormously enlarged was presented to view. It was irregularly nodulated, of a mottled crimson colour, with circular white patches scattered on its surface. It was exceedingly hard and resisting to the knife, and a section showed the dark structure of the spleen itself with white lines scattered throughout, and numerous circular sections of hard tubercles in various parts, varying in size and colour, the largest about half an inch in diameter. Some of these tubercles under the microscope, showed granules free and in clusters, fat globules, large circular cells containing granules very much resembling the compound granular corpuscule of Bennett, and most probably the result of inflammation; and a number of melanotic granules but no globules. The spleen weighed $2\frac{1}{2}$ lbs. The *liver* was healthy but of a sea-green colour from decomposition; there were about four white spots scattered over its surface, showing the existence of tubercles the size of small peas, extending into the substance of the gland. The gall bladder

was nearly empty and shrivelled up. The stomach, large and small intestines, mesentery and mesenteric glands were quite healthy; so also were the kidneys, which were rather pale. The bladder was filled with urine. *Head* was not examined.

Remarks, &c.—Madame P—— has had five children, and all are dead excepting the last born in May, 1850. The first child, a boy, died of teething at the age of $9\frac{1}{2}$ months. The second, a girl, died at the age of 18 months, with sores about her face, body and abdomen. The third, also a girl, died of cholera in 1849 at the age of $6\frac{1}{2}$ months. And the fourth the subject of this paper, at the age of six years, with a cancerous disease. The mother states, that all have had vomiting and purging of blood before death, more particularly severe in the third child; and up to the period of illness in each, they were fat and healthy children.

On examining into the hereditary predisposition, I find that Madame P——'s maternal grandmother died of Phthisis at the age of 36. Her maternal uncle died of the same disease at the age of 29. Her mother is still alive and in good health, and all her relations and those of her husband are perfectly healthy. Madame P., herself possesses a mixed temperament of the nervous and lymphatic, is very pale, but looks healthy. She says that she has been delicate since the age of 6 years; and suffers a good deal when pregnant, from a feeling of choking. She tells me that she has had an inflammation eight times, for which she has been bled and otherwise treated; and she has had the cholera twice. Her husband is labouring under Dyspepsia, which is undermining his health; and has suffered from Hæmorrhoids for the last 16 years. His father died at the

age of 60. Cancer has never been known in the family.

I have entered minutely into these details, as the case had been seen during life by a number of professional men in this city, some of whom had pronounced it Scrofula. The diagnosis, however obscure, was cleared up by the Microscope, which showed the presence of the elements of Cancer.

As to the difficulty experienced in diagnosing tumours, I might refer to many high authorities upon the subject; but will content myself in relating the following case, which will show that oftentimes the most able Surgeons will hesitate before pronouncing an opinion:—When a pupil of the Hospital of La Charité, in Paris, and following M. Velpeau, a girl from the country, aged 19, was admitted on 23rd August (1848), with a large tumour, situated over the upper portion of the right scapula and extending as far as the shoulder.—Before this eminent Surgeon reached the bed (No. 22), a party of pupils and young Surgeons (including myself), of different nations, were examining the case and pronouncing an opinion as to what class the tumour belonged. Three or four young men (British Surgeons) agreed with me as to the tumour being fibrous, and waited until M. Velpeau should reach the bed, to tell who were right. To our astonishment, he would not say what the nature of it was, but made up his mind to remove it, by operation, which he did some days after, when the tumour was found to be, and pronounced so by himself, of a genuine fibrous character.

Although cancer does not appear to have been existing in the family as an hereditary disease, we must consider the origin of it here as influenced to a certain extent by the health of the parents, which appears to have produced an effect on all the offspring.

That it is very rare in childhood is supported by the testimony of writers on this disease; but cases are reported where it has occurred in infancy, without any known hereditary taint. In Dr. Walshe's work on Cancer, is a table showing the absolute mortality from cancer in both sexes, and at various ages. In a grand total of 3036 cases, there were 2 cases under 1 year; 3 cases at 1 year; 5 cases at 2 years; 1 case at 3 years; 1 case at 4 years; 5 cases at between 5 and 10 years; and 5 cases between 10 and 15 years of age. Of 9118 cases, occurring between 1830 and '40 in Paris and its environs, and published in a tabular form by M. Tanchou, and quoted by Dr. Walshe, there were 23 cases between the ages of 1 and 10 years. M. Lebert in the second volume of his *Physiologie Pathologique*, says:—

“Quant à l'âge dans lequel les affections cancéreuses se montrent le plus fréquemment nous n'en avons trouvé aucun exempt. On sait que l'encéphaloïde de l'œil n'est pas une affection très-rare chez les enfants. Nous avons vu une fois une encéphaloïde du poumon chez un enfant de sept mois, et un autre fois un encéphaloïde du rein chez un enfant de quatre ans.”

Dr. Berg has, during his residence in Vienna, discovered carcinomatous induration of the entire pancreas in a newborn child*

The post mortem in the case reported, revealed the presence of a few tubercles in the liver and spleen, showing the co-existence of cancer and tubercle together, but not in the same organs. Lebert adduces three cases in which both products co-existed. And Dr. Martin, of Munich, has recorded a similar case in the *Lancet*.†

Montreal, Feb. 15, 1851.

* Rokitsansky's *Pathological Anatomy*. Vol. 2.

† Page 175, Volume 2 for 1845.

ART. LIV.—*Additional remarks on the Endemic Fever of Upper Canada, by JOHN JARRON, Surgeon, Dunnville.*

[Concluded from page 399.]

A species of Urethritis, both in married and unmarried females, is frequently met with, so much so indeed, as to have become one of the usual symptoms enquired after in fevers of a cystine character, where the "gravel" was not put forward as the most prominent complaint. Frequent desire to make water, passing little at a time, but with burning in the canal of the urethra, and intense pain at the meatus, are the usual symptoms. The latter is always the chief subject of complaint; it resembles that in cases of stone, but will be more permanent, and not confined to a short time after urine has been passed. It will sometimes be found when the biliary symptoms are slight, and little complaint made but of the uterine suffering, and want of rest, caused by the state of the urethra—sometimes putting on the appearances of a severe gonorrhœa, but with little discharge; at others accompanying a severe attack of fever or of the peculiar state of the uterus just alluded to. The urine is at first, seldom altered in appearance; and occasionally a little increased redness or tenderness at the meatus will be discovered, but generally it is red, prominent and excessively tender, the slightest touch almost making a patient scream from pain.

The course of one of my early cases made me exceedingly careful in tracing the nature of the affection in subsequent ones. The patient had just arrived in this neighbourhood; the affection had existed for two months; the symptoms already described were prominent; the pain intense; and she was obliged to make water every ten minutes. The biliary derangement was slight. I had no doubt of its being a case of stone, and proposed to examine the bladder next day. In the meantime, enjoined perfect rest, and ordered hydrarg. submur. opii *a a* gr. $\frac{1}{2}$, to be followed in two hours by a dose of sulphate of magnesia. On my return next day, I found my patient

about, and almost every symptom of her complaint had vanished. The pain and desire to make water had ceased about an hour after her taking the calomel and opium; she had left her bed to join a party of friends; the salts had operated freely, and she had passed the greater part of the night without being obliged to make water. Of course an examination, was out of the question, and a dose or two of mercurial purgatives restored her to perfect health, and she has been years without a return of the symptoms. In other cases where the symptoms occur with fevers, or the affection of the uterus, calomel and opium, will often give relief; and in a protracted case, where these were combined, I saw the same effect produced by calomel and colocynth without opium; the patient being little disturbed on the nights on which she took her purgatives, but harassed and annoyed on the intermediate ones.

I met with one case in a girl about ten years of age. She was subject to ague; the pain was paroxysmal, remitting about the same hour; and after a few days was followed by a severe bilious attack and ague. Fomentations, calomel, purges and quinine soon set all to rights.

In a few protracted cases I have seen pus discharged with the urine; but, with one exception, they have all yielded to general treatment, combined with the use of nitre and copaiba, though they have shown a disposition to return with subsequent attacks of fever.

The exception was in an unmarried female; it commenced in Toronto, and had continued for some time before I was consulted. The bilious symptoms were not prominent at first, but afterwards became so, and continued very marked until a short time before death.

The local affection did not yield to the usual treatment; the character of the urine became changed; pus was suspected; but from the distant residence of the patient I had little opportunity of seeing it. I suspected stone; but on examination none was found.—The meatus was prominent and tender;

but the urethra was smooth, and the presence of the sound in the canal excited little uneasiness even when its course was examined from the vagina. On a second examination, some time after, things had changed greatly for the worse; the meatus was more prominent, red and tender; the passage of a sound into the urethra excited great pain, and the slightest movement of it could not be made without extreme torture; the urethra was thickened and enlarged, and pressure on its course, when the sound was in the bladder, could not be borne. The least movement of the lower extremities, or even the slightest touch on the lower part of the body would cause pain in the meatus and the urethra; a person could not walk across the floor without increasing her suffering. She never had a symptom indicative of disease in the bladder, and to the last could bear pressure on the pubis without the slightest uneasiness in the region of it, or a desire to make water being excited. Large quantities of pus were for a long time discharged with the urine, which she was obliged to pass every few minutes, and her suffering was extreme for months before death. General treatment was of little advantage to the local disease. Local applications of every kind were had recourse to; injections of zinci sulph, and of tinct. opii. very little diluted, were of no use:—a strong solution of caustic, used at the suggestion of Dr. Widmer, of Toronto, who was consulted, and took great interest in the case, was equally ineffectual, and the patient sank at last under this most painful malady.

Though unsuccessful in this case, I am yet disposed to look on the solution of the nitrate of silver, as recommended by Dr. Macdonnell for chronic cystitis, and by others, even in the acute stage of gonorrhœa, as being a useful local application in protracted cases of this nature, when the local affection itself will constitute a disease irrespective of its constitutional origin.

I had intended to try it in another protracted case; but the fever and affection

of the uterus, both of which had been severe, and placed the patient's life in danger, suddenly subsided, and with them the urethritis; though a discharge of pus had continued for days, and no return of either affection has taken place for several months.

Inflammation of the lungs is seldom met with in cases of fever occurring early in the season; but we frequently see them in the month of November,—both in primary attacks, as well as in the recurrence of ague in those that have passed into that stage; and while the effects of fever were still apparent, and the constitution far from being restored to a normal state.

This affection will be readily known by its usual symptoms, which will often denote an actual and dangerous disease, of a character scarcely to be looked for in subjects so debilitated by fever, and with which so many of its peculiar appearances may be combined.

The usual treatment of Pneumonia must be followed in such cases. Early and free bleeding will produce the best results; showing admirably the modifying influence of organic inflammation on constitutions depressed and exhausted by that state of functional derangement, which excites and accompanies malarious disease; in which patients may one day be found in a state that the loss of even a moderate quantity of blood, (if it could be obtained by ordinary venesection?) might be expected to produce fatal results; and in one or two days after, with symptoms of acute inflammation of the lungs, when blood will flow freely, and life may depend on the large quantities abstracted. The state of the secretions are quite characteristic of fever, and such as require free purging; and the exhibition of moderate doses of calomel, antimony, and opium every six to eight hours, and a purgative draught every second day, I have found most advantageous. Quinine will generally be required so soon as the inflammatory symptoms subside.

The affection of the lungs is occasionally found with a congestive variety of

fever, in which a peculiar sinking, resembling collapse, and coldness of the extremities will occur, often periodically. It is immaterial whether we call such a state congestion of the lungs, or Congestive fever with affection of the lungs; the constitutional and local affections will both be distinctly marked; the nature of the secretions, the periodical occurrence of the state of sinking and coldness of the extremities, and other appearances will sufficiently mark its connection with malaria, which the tendency of the disease to recur and be followed by ague will make doubly sure.

In all these inflammatory affections of the lungs, tartarised antimony may generally be freely given, notwithstanding the dangerous results so frequently produced by even small quantities of it in common fevers; to which we will again advert in speaking of the treatment of fevers.

In seasons in which I could not with safety use the smallest quantity of this medicine in common fevers, I have found pneumonia to produce a perfect tolerance, and that it might then be used as in ordinary cases. If I were to lay down a general rule on this point it would be, that whenever blood-letting is required and could be borne, the antimony may be used with advantage and safety, irrespective of its effects in the common fevers of the season and locality; and that in congestive states of the lungs it will be beneficial when constitutional symptoms may preclude the further use of the lancet.

I have twice seen an epidemic influenza prevail in this country. The catarrhal symptoms, depression of strength, and bilious characters of the fever incidental to this affection were exceedingly well marked; and it, as usual, put on a good deal of the appearance of the fevers of the climate.

I had previously seen the same affection as an epidemic in China, the country parts of Scotland, and in London; its leading features were much the same in each place, but its occasional symptoms and the course of the disease, were

modified and assimilated to the usual affections of the localities and seasons. These observations I find corroborated by published accounts of the late epidemic that prevailed in London.

In this country, we usually find the bilious symptoms in excess, the prostration of strength great; the fever paroxysmal, but irregular in all its stages; the secretions much altered and depraved, requiring a free use of calomel, ipecacuanha, antimony and opium, with occasional purgatives, and often the early use of quinine in large doses.

Blood-letting is seldom required, nor are the patients in a state in which it could be carried into effect.

We occasionally find an attack of pneumonia supervene on the catarrhal affection and bronchial disease: With this the symptoms instantly change, the depression of the powers of life, and tendency to syncope, give place to a bounding pulse and burning skin, and the powers of the constitution to bear the loss of blood become still more evident than in cases of pneumonia following malarious fevers that have been previously noticed.

In China, the fever was decidedly bilious, with great prostration of strength, and the local affection of the bronchi so severe, that in many cases the discharge from their surface became purulent.

In one case, in which I had the advice of two of the most experienced surgeons of the fleet, we determined notwithstanding the great prostration of strength, to try venesection, to limit the effect of the diffuse inflammation of the mucous membrane, and to prevent threatened suffocation. It was twice attempted, but only a few ounces could be got, with little or no relief to the symptoms. In twelve hours after the last attempt, decided symptoms of pneumonia appeared; the pulse rose; the fever became ardent; the blood flowed freely, and the man at once lost twenty-four ounces, with decided relief to all the symptoms. Next day he lost twenty ounces more blood; and after a tedious

convalescence, was restored to perfect health.

Such cases were there frequent; and have also been noticed as occurring during the epidemic in London.

I have seen several well marked cases of the kind in Canada—the patients being for days in such a state of prostration, as to be unable to cross the room, or move without a state of approaching syncope being induced. Pneumonia would make its appearance, scarcely to be arrested by the freest use of the lancet; nor would pyalism be induced by calomel; the gums becoming contracted and red, with a white crust where they join the teeth; the lips red and sore, but the mouth remaining dry and parched, exactly as seen in the case previously quoted.

I have now before me an account of an epidemic influenza that prevailed in the United States and Canada, in 1807, and became blended with and modified their usual fevers. One gentleman says, "Some who had fever and ague suffered much, the cough being obstinate, and removed only by removing the ague." The observations of the celebrated Rush are to the same effect; while the graphical statements of a Dr. Watkins of Nashville, Tennessee, delineate a state and course of disease very similar to what I have met with, and his opinions of the modifying effects of epidemic influences on the common fevers of a country (which I have met with during the last ten days) exactly tally with my latter observations. He states, "that after its (the influenza's) departure, the fever which I have described as prevailing before it came, and which I sometimes called one and sometimes another of the malignant kind, according to its violence—gradually crept up again, only a little frightened out of its natural appearance, and forced to assume a new complexion, from the influenza's superior power. Instead of pains in the bones, it appeared now with pains in the side and chest, with obstinate cough, in the form of typhoid pneumonia—now a still more mongrel disease, and requiring a more

mongrel kind of treatment than before."

Dr. Boot of London, the biographer of the talented Armstrong, in whose volume I have met these observations, remarks, "I perfectly coincide with the inferences drawn by Dr. Watkins, to which I attach a high degree of interest. The continued fever which existed previous to the influenza, was arrested and supplanted by it, or called into action by its means; and the last left its traces in the cases which occurred after its own brief career. His paper is well calculated to show how different the wide-diffused and subtle cause of epidemic catarrh (might we not be warranted in saying the same of epidemic cholera?) is to that comparatively limited effluvia which we term *malaria*."

Dropsy is frequently seen, not only as consequence of these fevers, but complicating them during their course, even from the accession of the attack. Enlargement and obstruction of the abdominal viscera are so frequently followed by dropsy that they are looked on as its principal exciting cause; and the dropsy following malarious fever is attributed to the change in one or all of these organs induced by that disease.

Serious organic changes being, as I previously stated, rare in our Canadian fevers, I have scarcely ever seen cases of dropsy that I could properly attribute to the mechanical effect of visceral enlargement.

Organic disease of the kidneys, or that change in their substance known as Bright's Disease, is another cause of dropsy; but though we may find the urine albuminous, and pains in the back and loins may sometimes be present, a careful study of the cases will at once disclose a cause of disease, and a set of symptoms indicative of a more general derangement of the system; while their intermitting and irregular character will show that they could not be the effect of a prominent and pro-

gressive change of structure in any vital organ. Recent and extensive experiments have proved, that an albuminous state of the urine alone is no criterion of Bright's Disease; that even when dropsy does exist, that state of the urine may be present without any organic change in the kidneys, and is often found in other diseases where neither dropsy or disease of the kidneys accompanies it. In malarious fevers, where the change of the secretions is so apparent, the urine will be found far from being in a natural state. Observations made in the hospitals of the United States show, that in remittent fevers the urine is often albuminous; while some recent writers have pointed out the state of it as a characteristic between common diarrhœa and that form of it which precedes and is connected with cholera.

My own experiments have been too few to enable me to speak with certainty of the value of the albuminous urine as a mark of a peculiar organic lesion, or form of fever. It will sometimes be present in dropsical cases, at other times absent. I have known dropsy with albuminous urine to continue in an aggravated state for many months; the dropsical symptoms entirely to disappear for weeks before death, and the patient to be carried off by repeated attacks of paroxysmal fever to which he had been subject previous to the occurrence of the dropsy.

The observations of Bird and others on this state of the urine in choleroïd diarrhœa, and even in cholera itself, might render an examination into the state of this excretion in congestive fevers highly valuable. In them the discharge is always scanty, sometimes even, as in cholera, entirely suppressed for a time. Should albuminous urine be found in both states, it might afford some clue to the cause of the collapse

which is so prominent a symptom, if not the cause of death in both affections.

The combination of dropsy with malarious fevers seems exceedingly peculiar. A sporadic case will now and then be found without any apparent cause for the occurrence; but it would often seem to depend upon some peculiar idiosyncrasy of either a personal or family character, or on the temporary state of the air of a limited locality, which may sometimes become pretty general, as during the present season of 1850, when such cases have been very frequent.

In 1843 I saw an immense number of fever patients among a set of labourers employed on the Welland Canal. Slight dropsical symptoms supervened in a few protracted cases; but in one family, consisting of the parents and seven children, who were all affected with the fever at the same time, the very first symptoms were accompanied by a state of ascites, which increased as the fever advanced, and dropsy became general over the whole body. The fever and its paroxysms were more regular than I expected under such circumstances; it ran much the usual course, and so soon as the secretions became natural, and the tongue moist and clean at the tip and edges, quinine at once suppressed it, and with it the dropsical symptoms disappeared.

The family were poor and badly lodged, yet only one child died.

I kept my eye on them for many months after; they all suffered a good deal from the recurrence of ague, with the premonitory symptoms of which the dropsy always appeared, and was carried off by the same treatment that suppressed the ague.

In other instances I have seen members of a family suffer for a time from attacks of irregular paroxysmal fever,

sometimes with congestive symptoms, at others, those of a peculiar irritability. Puffing of the eyelids and face, or other dropsical symptoms, would at last appear with the attacks, and be removed with the immediate effects of them, and ultimately becoming permanent, but always modified and increased by the recurring attacks of fever which it would often be impossible to prevent; the patients being, after a lengthened period of suffering, carried off by the immediate effects of one of them. Palpitations and affections of the heart will now and then appear in such cases, especially when complicated with chlorosis indeed the course and symptoms of the affection will occasionally resemble an attack of dropsy following scarlet fever.

During the attacks of fever the secretions from the bowels would be exceedingly deranged and unnatural, the discharge of urine almost entirely suppressed; the skin exceedingly dry, perspiration seldom coming on; and in cases when the swelling of the face and upper parts of the body is prominent, we may expect a full and hard pulse, and other symptoms of irregular action, even in a debilitated constitution, and generally albuminous urine; thus leaving out the observations of Drs. Bleckall and Abercrombie, that dropsy with increased action generally first shows itself on the face and upper parts of the body, and is attended by albuminous urine. Sometimes in a locality we find the usual febrile attacks of children become irregular and congestive in their character; the face and eyelids of the patients will begin to puff in the mornings, or after each attack of fever; the urine will be scanty and the skin dry; and if not speedily checked, dropsy may set in.

During the present season dropsy has usually supervened on severe attacks

of congestive fever, which had been marked with determination to some of the abdominal viscera. It would show itself during the convalescence from the fever, and complicate the subsequent attacks of ague, requiring the most active and various treatment to save the patients, who were generally much reduced by previous illness.

None of the vital organs were found enlarged or prominently changed; the paroxysmal form of the fever would show that no very active inflammation existed; while this occurrence, the history of the case, the general state and appearance of the patient, and the nature of the secretions would sufficiently indicate the malarious disease, which the effects of quinine would render certain; while no prominent relief to the dropsy would be obtained unless the peculiar state of the general system was attended to and removed.

In the treatment of fever, complicated by dropsy, no particular course can be prescribed.

The malarious symptoms being the primary cause of the affection must be first attended to, and active measures pursued to relieve them, undeterred by the idea of debility with which dropsy is so often associated. Calomel purgatives must be freely and repeatedly given until the secretions become healthy and the tongue begin to clean, when the fever and dropsy will generally be found to abate; quinine may then be used in maximum doses, and a proper course followed to prevent the recurrence of the ague.

Active purgatives are usually more effective than diuretics in reducing the accumulation of water; and for this purpose, cream of tartar, pulv. jalap. comp. gamboge, or even elaterium, will often require to be used, and combined with calomel.

A combination of squills, digitalis, squills and calomel, in pills, will be found the safest and most useful diuretics; and they will frequently require to be given when a course of purging is regularly carried on.

In the cases of this season which have nearly all succeeded congestive fevers, I have found such practice most beneficial; a few grains of calomel with opium at night, followed by a full dose of elaterium, with pulv. jalap. comp. in the morning, seeming to act as a specific; immense quantities of serum would be discharged, and the swellings rapidly reduced. In some cases, however, care will be required in the administration of calomel, as ptyalism will be more readily induced than when an active state of fever or altered secretions is present. In one case, where the patient's life was saved by the free manner in which calomel and purgatives were used during the continuance of the fever and without the east tendency to salivation being induced, dropsy suddenly came on when the patient was in a state of convalescence and going about; two doses of five grains of calomel each, given at an interval of two days, and followed by brisk purgatives, produced as severe and protracted a state of salivation as I almost ever saw.

Should these cases become chronic, or steal on gradually from repeated attacks of paroxysmal fever, or in chlorotic girls, a modified course of treatment must be followed. The stomach and bowels will require particular attention; quinine will now and then be necessary to suppress the tendency to ague and improve the secretions; iron myrrh and tonics will sometimes be useful; and the dropsical symptoms must be treated on general principles. Medicine will often afford

scarcely a temporary relief, and I should be inclined to suggest an early change of locality, or even of climate, when a personal or family predisposition to such attacks was manifest.

There is scarcely a subject within the range of medical science affording so many points of interest to the scientific practitioner, and which has been so much overlooked by systematic writers, as the effect of climate and locality on the diseases of infancy and childhood. In large European cities, from the practitioners in which we usually have a description of that class of diseases, the localities, as well as the habits and mode of life of the people, give a peculiar virulence and fatal tendency to the diseases of childhood, which is not found in the rural districts of the same countries; and families desirous of preserving the health of their children, and who have the means of doing so, take care that they shall spend a certain period of every year in the country, and if possible near the sea. If we trace Europeans in their removal from the north to the southern climates, and even to the torrid zone itself, we will find them, both males and females, enjoying a moderate state of health, and often reaching an old age; but the children of such parents, born and brought up in these climates, will be sickly and puny when compared with European children in like circumstances, and in their own climate; that in the West, and more particularly in the East Indies, the children of Europeans are often obliged to be sent home at an early age to preserve their lives, it being scarcely possible for European parents to rear a family in these climates.

The diseases under which such children drop and die may bear a slight resemblance to European affections, but many of their symptoms will be unusual

and their general character different. Such differences will be ascribed to heat and the effects of the climate, and justly so,—being a modification of their effects on adults, characterized by bilious derangements, paroxysmal fevers, and their usual consequences.

The sickly look and puny state of American children, when compared with those just arrived from the northern parts of Europe, is exceedingly obvious;—showing even in the first generation, those effects of climate and circumstances that within a very limited period have brought individuals of the same family of the human species to exhibit such external differences, that individuals might be found bearing the characteristics of two distinct classes or varieties of the human family.

In our new settlements and malarious districts, we see the effects of climate as evident in the diseases of children as of persons more advanced in life; and though their course and symptoms may be somewhat different, yet their general character is the same.

Dunnville, January 10, 1850.

ART. LV.—*Contributions to Meteorology.* By CHARLES SWALLWOOD, M.D., *St. Martin, Isle Jesus.*

Mean Results of Meteorological Observations made at St. Martin, Isle Jesus, C. E., for 1850. The Geographical Co-ordinates being Latitude 45° 32' North, and Longitude 73° 36' West.

BAROMETER.—The Barometer is furnished with a moveable cistern; the diameter of the Tube 0.20 inches, and its capacity is 1 to 8; the readings are reduced to 92° F. The mean height for January was 29.718; February 29.655; for March 29.434; April 29.507; May 29.269; June 29.597; July 29.585; August 29.622; September 29.558; October 29.509; November 29.493; December 29.601

The highest reading was in January, and indicated 30.320 inches; and the lowest was 28.755 in March.

THERMOMETER.—*Dry Bulb.*—The mean temperature of the Thermometer in spring was 56.050; in summer 65.161; in autumn 38.000; and in winter 31.000; and for the year 47.677. The highest reading was in August, and indicated +92; the lowest was in February, and was -26, (or below Zero.)

The mean of the *Wet Bulb* Thermometer in summer was 63.50.

There were 62 days in which rain fell, and amounted to 25,506 inches. The gauge is placed 20 feet from the ground. The rain was accompanied on 13 days with thunder and lightning. Snow fell on 44 days.

The most prevalent wind was the W S W, and the least so the S E by S; the next in maximum was the E N E; the mean velocity, as registered by the Anemometer, was 8,049 miles per hour for the year.

The electric state of the atmosphere, as indicated by the Electrometers, connected by a rod 25 feet high, showed the greatest intensity on the 23rd June at 4, P.M.

The quantity of Ozone, as indicated by the Iodide of Potassium test, was very variable at each observation (twice a day); and I am not prepared at present to state, what should indicate saturation. I have carefully preserved each register, which shows that a humid atmosphere, either rain or snow, indicates an increase; and on the other hand, a dry atmosphere, or sharp frost, a decrease; nor have I at present been able to satisfy myself, that the variation depends upon a change in the electric state of the atmosphere, at least so far as indicated by the Electrometers.

There was a general depression of the Barometer on the 10th November,

it being 28.941, and was probably connected with the great atmospheric wave. It was accompanied with high wind and stormy weather; the final trough finishing on the 28th of November, Barometer 29.960.

St. Martin, Feb. 10.

ART. LVI.—1. *Geological Survey of Canada; Report of Progress for the Years 1847-48.* pp. 165.

2. *Geological Survey of Canada; Report of Progress for the Years 1848-49.* pp. 65.

3. *Geological Survey of Canada; Report of Progress for the Years 1849-50.* pp. 115.—By W. E. LOGAN, Esq., *Provincial Geologist.*

Having in our last number furnished a sketch of the valuable *joint* labours of our Provincial Geologist and his two able assistants, we now proceed to take a similar review of the *detached* operations of the latter, as equally important and interesting.* Those of Mr. Murray, during the season of 1847-8, were in the first instance directed to a geological examination of the north shore and islands of Lake Huron,† including a survey of the French River up to its exit from lake Nipissing, the connecting link with the waters of the Ottawa; and subsequently to a survey of a suite of small lakes discovered in the interior of the great Manitoulin Island: and in the following year, the former researches were resumed, so as to embrace a survey of Spanish River, and a visit to the Wallace Mines, in addition to an

* Under ordinary circumstances the writer of this article would think it necessary to apologise to the professional reader for the great length of this and other papers on the same subject; but he trusts that none will be required when it is borne in mind that the circulation of the printed "Reports" often extends little beyond the tables of the members of Government and of the Legislature, and that the *British American Journal* is at present the only literary and philosophical periodical in the Province, through which the public can have a chance of being kept informed of the progress of so important an undertaking as the Geological Survey, or be made aware of the great amount of useful and interesting information elicited in the course of it.

† See Report of 1847-8, p. 94 to 124.

examination of the coast of Lake Huron from Penetanguishene on the east, to Cape Hurd on the west, and from thence southerly along the shores of the Huron and Western districts to Lake Erie.

In so widely extended and novel a field of research, much interesting and attractive matter might be pointed out, did our limits permit, but we are forced to be content with the following few isolated sketches, confined to the most prominent geographical and geological features of the country north of the lake, and the most remarkable of the economic materials found disseminated therein—‡

"The greater portion of the North coast of Lake Huron, west of French River, may be described as generally poor and rocky, in some parts wholly destitute of vegetation, in others thickly clad with trees of stunted growth and of inconsiderable value. These marginal forests are chiefly composed of trees common to the colder and more mountainous parts of Canada, the species being balsam fir, spruce, red and white pine, white birch and poplar, predominating on dry parts, while white cedar and tamarack abound on the swampy and moister ground. But while the coast line exhibits this uninviting appearance, the interior in many places presents a very different character, especially in the valleys of the principal streams, where there are frequently extensive flats of rich and deep soil, producing maple, oak, elm, birch, and basswood, besides occasional groves of both red and white pine of large size.

"To the westward of the Spanish River the coast is for the most part low, but precipitous and rugged; it abounds with safe and commodious harbors among its numerous islands and inlets, which can scarcely fail in many instances to become, in the course of time, of commercial importance. To the eastward of the river the scenery is improved by the gradual approach of a high range of picturesque hills, coming out upon the coast about four miles westward of the Hudson Bay Company's Post at La Cloche; one of the highest points of which was ascertained to be

‡ See Report of 1847-8, p. 94 to 96.

482 feet above the level of the lake. This part of the lake is thickly studded with islands, and the coast is much indented with extensive bays and inlets, which offer shelter and security, during any storm to which the voyager may be exposed; but are dangerous and difficult to approach from the open lake, in consequence of the numerous reefs and sunken rocks lying concealed outside of them.

"To the eastward of the Manitoulin group of Islands another change occurs in the character of the scenery, and between Shebawenahning, an Indian trading post about thirty miles east from La Cloche and the French River, the coast and islands are for the most part low rocks entirely destitute of vegetation.

"The French River is a continuous chain of long narrow lakes, at small elevations one over the other, connected by short rapids or falls; these lakes are crowded with large and small islands, the channels among which are frequently contracted to a few yards in width, and thus acquire in many places a fluvial semblance; and the waters of Lake Nipissing, after passing through these successive quiet intervals join those of Lake Huron by four main outlets, about four miles apart from each other, which are included in a distance of fourteen or fifteen miles. From various points up these main channels, a multitude of narrow outlets break off, and the whole divide the land at the mouth of the river, into a perfect labyrinth of small islands. The principal channel is the one farthest west, generally known as the North Channel; and it was through this, that the survey was carried."

In their progress up this branch from lake Huron to lake Nipissing, though not more than 51 miles, the exploring party had to make no less than seven portages, —thus setting at rest all hopes of a navigable communication between the two lakes. A careful series of observations also determined the height of Lake Nipissing above Lake Huron to be 69 feet, or 647 feet above the level of the sea.

But to return to Lake Huron and the Manitoulin Islands. It is a remarkable geological feature of Lake Huron that,—

"A ridge of land which, proceeding from the vicinity of the Falls of Niagara, sweeps round the upper extremity of Lake Ontario, and running thence into the promontory of Cape Hurd and Cabot's Head, is represented in continuation by the Manitoulin Islands, divides Lake Huron into two parts, which may be called the south and the north. The south part constituting the great body of the lake, with a circumference exceeding 720 lineal miles, has an area of 14000 square miles; the north portion is again divided into two parts, east & west, the former of which, called Georgiana Bay, extending from Nottawasaga to Shebawenahning and the eastern extremity of the Grand Manitoulin Island, with a length of 120 miles and a breadth of 50, has an area of 6000 square miles while the remainder, called the North Channel, gradually narrowing as it proceeds westward, presents a surface, exclusive of the various islands with which it is studded particularly in the eastern end, of 1700 square miles; the whole area of the water of the lake would thus appear to be 21,000 square miles.

"Only four of the islands which there serve to divide the lake go under the denomination of the Manitoulin; these are generally designated on maps, Drummond, Cockburn, Grand Manitoulin and Fitzwilliam or Horse Islands; but there are many others of minor importance which are links in the same chain. The same formations which constitute the Manitoulin Islands, constitute also the peninsular promontory of which they are an uninterrupted prolongation, and a uniform geographical character thus runs through the whole. That part of this promontory and of the islands which face the great body of the lake, presents a general line, leaving out coves and inlets, coinciding with the strike, which from a bearing of 20 degrees east of north, gradually bends round to half as many north of east, in a distance of 170 miles; from this line, the land slopes gently up, for a varying breadth and to a varying height, and then falls precipitously in escarpments in the opposite direction, which are deeply indented by many transverse ravines. The form of surface which is thus presented by this belt above the level of the lake is maintained below, and the result is, that while the lake on the shelving

side is shallow, affording a dangerous approach to the land and few good harbors, on the opposite side it is deep, and good harbors for all sizes of vessels abound, the traverse ravines becoming sounds, long inlets and capacious bays with plenty of water and good shelter.

"All these islands present an abrupt escarpment to the north-east, and a gentle slope in a contrary direction. The same character is more grandly displayed in the coast between Cape Hurd and Cabot's Head, and it serves to illustrate the structure in other parts.

"Along the bold shore of the southwestern side of Georgian Bay, the water is very deep at a very short distance out from land. Yet at every point and island, and sometimes also in the bays, a fringe of reefs prevails close in upon the shore, which appear to be composed of loose blocks, and are probably in part derived from the destruction of the neighbouring cliffs, and they make it in many places dangerous to approach too near the land. This is the case nearly all the way from Nottawasaga to Owen's Sound.

"The *Manitoulin Islands* and their corresponding peninsular promontory are covered with dense forests, which are frequently of the description usually indicating a rich and fertile soil. On many parts of the southern end of St. Joseph, and in the smaller islands of the Manitoulin group, but especially on the Grand Manitoulin, besides groves of stately pine that, under more favorable circumstances, might afford a considerable supply to the lumber market, there are extensive tracts of land, almost exclusively growing maple, elm, oak, ash, birch and basswood, of such character in point of size, as not to be greatly surpassed by the produce of the justly celebrated hard timber lands of Canada West. Several small settlements have been made on St. Joseph Island, the principal one of which is on the south side, where there is a small village known by the same name as the island; near it, a small stream enters a capacious bay, and affords a sufficient fall and an ample supply of water for milling purposes; a saw-mill was at one time in operation upon it, which of late years has been abandoned. Cockburn, the Grand Manitoulin, and Horse Islands, constituting an Indian reserve,

Indian settlements alone have been made upon it, the chief of which are at Manitouwaning, Sheguenandod, and Wequamekong, all on the Grand Manitoulin. At the first mentioned place there is a Government Indian Establishment, under Captain Ironsides of the Indian Department, a gentleman to whom our party was much indebted for useful information and liberal hospitality. At Wequamekong, where there is a Roman Catholic mission, the clearings are extensive, and many of the Indians have abandoned their wandering life and subsist upon their farms; and this is the case too at Manitouwaning; but at Sheguenandod, although by far the finest tract of country that we saw is found there, the clearings are few and scattered, and the natives are more frequently to be met with in the woods or in their canoes, than in their houses or on their lands.

"The Grand Manitoulin is a very important and very beautiful island. Its length is eighty, and its average breadth twenty miles; and the whole area of the island, exclusive of its numerous bays and inlets, cannot be less than 1600 square miles. The escarpments which have been mentioned run longitudinally through it, and some of them show heights of 255 to 300 feet, and the most elevated points do not exceed 350 feet over the level of the Huron. The amount of moisture which falls into this area must no doubt be considerable, and the interior of the island appears to be well supplied with streams and lakes. But there is a peculiarity belonging to at least one of these lakes which deserves to be noted. Its form may be compared to that of an hour-glass, expanding at the ends, which are seven miles wide, while in the middle of the length, which is ten miles in a N. W. and S. E. direction, it contracts to a breadth which in the narrowest part does not exceed one mile. The area of the expansion is 28 square miles, that of the western twenty-one square miles, and that of the middle part six square miles, making a total area of fifty-five square miles. Its rim is fringed to the waters edge by a thick growth of evergreens, chiefly cedar, except on the southwestern side, in some parts of which, precipitate ledges rise to the height of ten to forty feet; on this side too the land rises into an escarpment,

while it slopes up gently on the other, exhibiting in these features a prevailing character already mentioned, arising from geological structure. The eastern corner of the lake approaches to within a mile and a half of Manitowaning Bay, and on levelling the difference of elevation between the two it was found to be 155 feet, and a question of some interest connected with the lake (which constitutes its peculiarity) is, the source whence it derives its supply of water. After closely examining its shores, only one small stream was found to run into a little bay on the south west side of the narrow part, which, by all that could be learned from the Indians, was its only visible supply; but while it thus appears to receive so scanty a tribute from the surrounding country, it furnishes sufficient water for three large brooks which fall from it to the south, the west and the north. The first of these discharges itself into the main lake near Michael Bay on the south side of the island, after supplying several small ponds met with in its course; the second, which leaves the lake at its western extremity, feeds a succession of small lakes, and falls into Beaufort Bay; while the third, flowing to the north, supplies two more lakes, and eventually terminates at Sheguenandog Bay. The one surveyed is nearly two miles in length, with a breadth exceeding half a mile; and the other is about the same size. Understanding that the lakes were un-named, at the suggestion of Captain Ironsides, the title of Tecumtheh was given to the largest, and that of Neewash to the lowest, after the two celebrated Indian warriors who bore those names; the third was called the Chief's Lake, in honor of the chief who favored us with its description. Another large lake is said to occupy a portion of the island, between Beaufort Bay and Bayfield Sound; but no satisfactory description could be obtained of its character, and there was neither time nor opportunity to make an excursion to it. The rock of the country being chiefly limestone, which is so frequently known to give subterranean passage to streams, it appears probable that these lakes may be related by such a communication, and there may be others in the same way connected with them, and thus the water of Tecumtheh

Lake may result from the drainage of a considerable part of the island."

The extreme length of the foregoing (necessarily condensed) extracts precludes our taking further notice of the sequence and distribution of the geological formations in this region than the following:—

"The coast and islands of Lake Huron present greater advantages for the examination of the rocks, which constitute Western Canada, than perhaps can be found in any other part of the Province; for while the main land on the northern and more eastern shores of the lake exhibit continuous exposures of the more ancient formations, the Manitoulin Islands, and the coast between Matchedash Bay and Sarnia shew in regular succession the whole of the fossiliferous groups from the lowest to the highest contained within its limits. And that the older groups observed consist of a metamorphic series, composed of granitic and syenitic rocks, in the forms of gneiss, mica slate and hornblende slate; and of a stratified series composed of quartz rock or sandstones, conglomerates, shales and limestones, with interposed beds of greenstone; and of the fossiliferous groups following these, six formations were met with, which in the New York nomenclature come under the following designations:—1. Potsdam sandstone; 2. Trenton limestone; 3. Utica slates; 4. Loraine shales; 5. Medina sandstones; 6. Niagara limestones, including the Clinton group."

On the subject of economic materials it must be sufficient to observe:—

"With the exception of the veins holding copper ore, not much of economic importance came under notice on Lake Huron. On the north shore of St. Joseph Island near Campment D'Ours, there is a large quantity of very fine silicious sand probably derived from the disintegration of the quartz rock beds, which appears suitable for the manufacture of glass.

"Although stone fit for lithographic purposes has been found in the limestone formation at various parts east from Lake Simcoe, no rock of similar quality was observed in that formation on Lake Huron. The only useful purposes

for which the Trenton group are adapted, are, as building stone and for burning into quick lime; for the latter purpose most of the lower beds are too arenaceous, but good lime can be obtained from most of the higher parts of the formation.

"The Niagara limestone affords an excellent material for building purposes for which its value in this respect has already been well tested on the Welland Canal and in other parts of Canada West, where the stone has been obtained from that formation. The stone which the same group affords upon Lake Huron, is in no respect inferior in quality to the rocks at Thorold and Hamilton. Many beds likewise of the same formations burn into good lime; they are generally whiter in exterior appearance than the rest of the deposit.

"That the north shore of Lake Huron is destined sooner or later to become a mineral region of importance, appears very probable. Although the whole district is covered by a dense forest, still in its original wild condition, already have the researches of the first explorers, only a short time previously commenced, been rewarded by the discovery of copper lodes, some of decided value, and others of considerable promise, and an additional number have been subsequently brought to light.

"The most important locality is that which has acquired the designation of the Bruce Mines, of which particular notice has already been taken.

"Another location was visited, situated near the Spanish River; but only one lode was observed holding the ores of copper, nor was it then known that any others exist there. Other lodes were inspected on Echo Lake in a quartz-rock cliff north of a limestone band, but the indications in them were not so promising as in those in the greenstones and slates."

Passing on to the investigations of the following year, we again find much to interest, but must rest satisfied with giving a mere outline of our geologist's tour, and, with the exception of a few words on the bituminous shales at Kettle Point, and on the Spanish River and the Wallace Mines, referring the reader for particulars to the body of the Report.

After a short excursion up the Ouse or Grand River to examine the rocks in the township of Dumfries, Mr. Murray repaired to Penetanguishene; and after re-inspecting several points between that and Cabot's Head, and again touching at the Manitoulin Islands, collecting fossils and mineral specimens, along the south-west shore of Georgiana Bay, past the Isle of Coves and Cape Hurd, and thence southerly to the Rivière au Sable, the Sagune River, Goderich, Cape Ipperwash or Kettle Point and Port Sarnia, and thence by the River and Lake St. Clair and River Detroit to Windsor in the Western district. From thence he returned to the Sault St. Marie to join Mr. Logan in the survey of the Bruce Mines; and, that accomplished, proceeded on the survey of Spanish River, and a visit to the Wallace Mines; and concluded the operations of the busy season by an examination of additional parts of the coast of Georgiana Bay, on his way back to Penetanguishene.

With regard to the bituminous shales: in former articles we alluded to the presence of these rocks elsewhere having held out delusive hopes of finding coal. On this head Mr. Murray observes as follows, with regard to those existing in the neighbourhood of Kettle Point in the Huron District:—

"The black color and inflammable nature of the bituminous shales of Kettle Point have suggested to some persons, the possibility of their proximity to available coal seams. But the formation to which they belong is well known in the State of New York, where useless and expensive experiments were made in it, before the institution of the State Geological Survey, in a vain search for mineral fuel; no trace of which any more than of the Carboniferous Group, has yet been met with in Western Canada."

The information acquired respecting Spanish River may be regarded as of

* See Report of 1849, p. 25-6.

great prospective value, and is as follows :—

“ The Spanish River joins Lake Huron in lat $46^{\circ} 12' N.$, long. $82^{\circ} 27' W.$ from Greenwich, falling into an extensive and beautiful bay land-locked by islands and projecting points from the main land. A bold and elevated promontory connected with the main by a long narrow isthmus, in some parts not over five chains across, separates the bay from the body of the lake, the communication to the eastward being through a narrow but deep channel called the Petit Detroit, between the southern extremity of the peninsula, and the eastern end of a large island, the north coast of which, stretching westward, runs nearly parallel to the general trend of the main shore.

“ The outline of the coast is irregular, being indented by deep bays and coves, which in some parts are perfectly land-locked by groups of long, low and narrow islands running parallel to the main shore, and affording excellent places of shelter for all classes of vessels under almost any circumstances.

“ Four important tributaries were met with in the ascent, the two lower flowing in from the north on the right bank, the two higher from the west on the left, at the ends of the eighth and tenth distance.

“ For two miles at the mouth, the river is on an average half a mile wide, but much silted up by alluvial deposit, bearing a luxuriant growth of reeds and other aquatic plants, and through the marsh thus formed, numerous narrow channels exist, some of which are deep enough to float vessels drawing five feet of water. Above this the breadth contracts to six chains, but expanding again a little higher up, the next ten miles maintains a breadth of between ten and thirty chains, including a number of islands, which altogether occupy a considerable area in that part of the stream.— In this distance, the water is so still that no current is perceptible; it increases in velocity to the lowest of four principal tributaries, called La Rivière au Sable; and about four miles above this, becomes rapid, and a strong current is felt in the ascent for about a mile. Just below the first tributary, the breadth of the river is 9 chains, and above the second five chains, which it

maintains as far as the upper extremity of the sixth stated course. To the distance of thirty miles from the mouth, the river is navigable to craft not drawing over five feet, the only difficulty being in the mile of rapid water four miles above the Rivière au Sable. Further ascent is interrupted by a rocky step in the valley, over which a beautiful sheet of water is precipitated in a fall of 27 feet, including the rapid immediately at its foot.

“ The extent and value of the pine forests in this region, the facility offered by the river for navigation, the water power to be found on the main stream and all its tributaries, and the capabilities of the soil for raising most of the necessaries of life, all tend to indicate a probability that it is destined at some future period to become of commercial importance.”

Having at length brought our imperfect sketch of Mr. Murray's labours to a close, we now purpose to advert to the investigations of the talented conductor of the Chemical and Mineralogical department of the Survey; and, under ordinary circumstances we should experience little difficulty in so doing, as all that would be required would be to notice a few of the many elaborate analyses of minerals, mineral waters, and soils submitted to his examination. But it having so happened that an ungenerous attempt has lately been made to lower that gentleman's high professional character in the estimation of the public, we consider it but right to allude rather pointedly to that circumstance, and to observe, with no wish to disparage the actual merits of Mr. Hunt's assailant as a Chemist, that, being no Chemists ourselves,—“ *non nobis tantas componere lites;*” but that we nevertheless consider ourselves free to regard the professional abilities of Professor Croft*

* We allude chiefly to an article by M. De Rottermund in the French language which appeared in the December number of this Journal for 1849, to which Mr. Hunt gave what was generally considered a triumphant reply in the following number; but with which Mr. De R. was so little satisfied that, finding the Editor opposed to farther useless, wordy

the zealous defender of the accuracy of Mr. Hunt's researches) as fully on a par with those of M. De Rottermund;† and that even were that not the case, we should have only to refer to the overwhelming testimony of Chemists and Mineralogists of high repute such as the two Professors Silliman,‡ and Professors Dana,§ and Shepard,|| in America, and

warfare, he was led to prolong the attack through the medium of a French newspaper, to which Mr. Hunt did not think it necessary to reply; but which was taken up by Professor Croft of Toronto, in a letter in the *Globe* in November last, in which he maintains that "there is not one point touched upon in which Mr. Hunt is not perfectly right, and M. De Rottermund egregiously wrong, and challenges the latter to come forward with some practical experiment, to prove that he knows what he is talking about."

† It may be proper to observe that M. De Rottermund was for a short time attached to the Geological Survey as Chemist and Mineralogist, immediately prior to Mr. Hunt; and, though now a private citizen, he appends to his published signature the titles of "*Ancien Professeur de Chimie Analytique l'Ecole Normale de Bruxelles, et Membre Correspondant de la Societe de Paris*;" and also that Mr. Croft is, and has been for some years, "Professor of Chemistry and Experimental Philosophy to the University of Toronto," and may therefore be presumed to be well qualified for the office.

‡ Mr. Hunt brought the highest testimonials from both of these eminent American Chemists and Mineralogists to the head of our Government, in the course of which is used the following emphatic language:—"Few men whom it has been our fortune to know are so well acquainted with the theory and practical details of the difficult science of Chemistry." Add to which in the preface to the 1st edition of "*First Principles of Chemistry*," by Professor Silliman, junr., published in 1845, the author thus expresses his obligations to Mr. Hunt:—"The organic Chemistry is presented mainly in the order of Liebig in his '*Traité de Chimie Organique*.'" The author takes pleasure in acknowledging the important aid received in this portion of the work from his friend and professional assistant Mr. T. S. Hunt, whose familiarity with the philosophy and details of Chemistry will not fail to make him one of its ablest followers." But this is not all:—for on referring to that standard periodical "*The American Journal of Science and Art*," so ably conducted by those gentlemen and others, we find, that during the last four years Mr. Hunt has been a valued contributor of no less than 31 articles on various intricate chemical and other philosophical subjects, spread over a surface of about 140 pages.

§ J. D. Dana, A.M., Professor of Natural Philosophy Yale College one of the conductors of the "*American Journal*," and author of "*A System of Mineralogy* comprising the most recent discoveries," &c., thus expresses his high opinion of Mr. Hunt's merits:—"With a thorough knowledge of the principles of Chemistry and Mineralogy, he unites great skill in analysis, the utmost faithfulness and accuracy in investigation, and that tact, range of thought, and acumen which fits him for original research, and promises much advancement to his favourite science, and credit to himself."

|| Charles U. Shepard, Professor of Chemistry in Amherst College Massachusetts, and in the Medical College South Carolina, also testifies to Mr. Hunt's being "possessed of unusual perseverance, uncommon quickness of perception, and an extraordinary

of M.M. Laurent and Gerhardt, in France,† as more than sufficient to set the matter at rest. Without therefore going unnecessarily into the particulars of the controversy, we are content to refer our readers to the notes at the foot of this page; and, that done, we proceed, to the following remarks on Mr. Hunt's investigations:—

During the season of 1848, Mr. Hunt's attention was, in the first instance, directed to the examination of the rocks along the Ottawa, from Montreal to beyond Bytown, with reference to their mineralogical character—a region embraced in the crystalline limestones which underlie unconformably the Silurian rocks of the country, and are interstratified with syenitic gneiss, and which afford many valuable economic materials; but on both of these subjects we are compelled to be very brief. The general features of the rocks have been described by Mr. Logan in former Reports. Of the economic materials furnished by them, we have only room to notice plumbago and phosphate of lime. Of the former, there is a mine in the township of Grenville, which was for-

familiarity with Chemical theory,"—added to having "entire confidence in his conscientiousness; and that he had therefore no hesitation in predicting that Mr. Hunt would discharge his duties to the full satisfaction of all concerned, and in such a manner as to enrich science with many valuable discoveries.

¶ To the foregoing array of high American testimonials we are happy to be able to add that of M.M. Laurent and Gerhardt, the able conductor of that standard Parisian periodical "*Comptes Rendus de Travaux de Chimie*," in the Abstr. number of which the following tribute is paid by M. Gerhardt to the accuracy and value of Mr. Hunt's researches on several Chemical subjects, but—more particularly on the composition of gelatine:—"On doit à M. Hunt sur la composition de la gelatine et des matieres pratiques, plusieurs rapprochements intéressants sur lesquels j'appelle l'attention des Chimistes.

Ces rapprochements fort ingénieux de M. Hunt sont sans doute ce qu'on a dit jusqu'aujourd'hui de plus sensé sur la composition de matieres d'un étude aussi difficile que l'albumine, la fibrine, et la gelatine.

Je dois aussi à ce propos réparer un oubli qui a été commis à l'égard de M. Hunt, bien involontièrement, je l'assure par M. Laurent et moi, aussi que par M. Cahours. M. Hunt a attaqué il y a plus de deux ans, comme étant fautive, la formule donnée par M. Mulder, pour leucine, &c.

Ces rapports sont ceux que nous avons nous-mêmes réduits de nos analyses quelques mois plus tard," &c.—[Vide *Comptes Rendus*, &c., Sixième Année, No. 8, Aout, 1850, p. 317, to 320.

merly worked by the Hon. Mr. Harwood; and there is a deposit of the same mineral about half a mile further north, in which, in addition to sphene tabular spar, plumbago, pyroxene and feldspar, were found crystals of yellow idocrase.

From Bytown Mr. H. proceeded down the Rideau Canal to Perth, to visit the interesting mineral region in that quarter; and was fortunate in being there joined by Doctor Wilson, a resident Physician who had devoted much attention to the natural history of his district, and had lately discovered a deposit of apatite or phosphate of lime in the township of Burgess. In company with this gentleman Mr. H. made several interesting excursions, among which was one to the locality furnishing the phosphate of lime above mentioned, which was found abundantly disseminated in a bed of coarse crystalline limestone of a flesh-red colour; and not far from which was also found a deposit of copper pyrites of sufficient richness to hold out a prospect of probable profitable results if well explored. Though unable to find room for various other particulars, we quote the following observation by Mr. Hunt, on the value of the phosphate of lime in an agricultural point of view:—

“The attention of scientific agriculturists has, within a few years, been much directed to the important part sustained in the vegetable economy by phosphates; and the great fertilizing powers possessed by phosphates of lime, particularly in the form of bone manure, are universally recognized. With a view of obtaining some cheaper source of this substance, some enterprising Englishmen have lately been exploring a deposit of native phosphate of lime in Spain. Under these circumstances, the limestone just described, which contains throughout it a large supply of this important substance, is certainly well worthy of the attention of our agriculturists. The rock might be directly

ground to a powder and applied to the soil, or previously burned to lime, when the united virtues of the phosphate and of quick lime would be rendered available to the soil. In two or three other places, the limestone has been observed to contain large quantities of the mineral disseminated, and doubtless in sufficient abundance to supply any demand. The phosphate of lime is largely contained in wheat; and the exhaustion of this ingredient is one great cause of the sterility of our worn-out wheat lands. In a grain-growing country like Canada, therefore, the existence of such deposits as these will prove of great importance.”

During the same season Mr. H. visited the most noted mineral springs in Upper Canada—such as those of Caledonia in the County of Prescott, the Tuscarora Sour Springs near Brantford, the Saline and Sulphur Springs near Lancaster in Wentworth, the Charlotteville Sulphur Spring in Norfolk, and the Saline Spring near Port Dalhousie in Lincoln. After which he returned to Lower Canada and examined various soils in the valley of the Richelieu, together with several deposits of peat in the vicinity of St. Hyacinthe. In 1849, he resumed his examinations and analyses of various mineral springs in the valley of the St. Lawrence and Richelieu—such as those of Varennes, St. Leon, Caxton, Plantagenet, Sabrevois, St. Benoit, and St. Johns (Quebec), with the intention of ascertaining accurately the constitution of these waters, with reference to their importance as medicinal agents, and to compare those of the different geological districts with each other. And in 1850, he resumed the examination of about 30 specimens of characteristic soils collected by himself in various parts of both sections of the Province—such as, from the Seigniories of St. Charles, St. Hilaire, Chambly, St. Dominique, and St. Hyacinthe in Lower Canada; and from near Chatham (in Kent), Woodstock, Zora, London, Lobo, Hamilton, St. Cath-

rines, and Port Dalhousie, in the Upper Province, besides visiting several additional springs near St. Catherines, Chippewa, and Niagara, as well as those of Providence near St. Hyacinthe, the Aurora Spring of Point du Jour, and the Georgian Spring of Plantagenet, in the Lower Province.

Having enumerated particular localities, we must of necessity refer our readers to the Reports for details, and content ourselves with the following slight notices of the principal springs, without any reference to the scientific minutiae of chemical analysis, or particular regard to arrangement, or dates.

Among the whole of the mineral springs mentioned, those of Caledonia may justly be allowed to take the lead, as of oldest medicinal as well as fashionable repute.

"These springs are four in number; the waters rise through the strata of clay which overlies a rock equivalent to the Trenton limestone. Three of them, known as the "gas spring," the "saline spring," and the "white sulphur spring," are situated within a distance of four or five rods, and the mouths of the latter two are not more than four feet apart. The fourth, known as the "intermitting spring," is situated about two miles distant, and is much more saline than the others. The first three are alkaline, the sulphur spring strongly so, while the latter contains in solution a great quantity of earthy chlorids. None of these waters are what are called "acidulous saline," a character which is due to the presence of large quantities of carbonic acid, and renders them pungent to the taste, and sparkling like champagne; to this the Seltzer and Saratoga waters owe their peculiar characters. The quantity of this acid found in these waters, is no more than is required to form bicarbonates with the bases present."

The temperature of the *gas spring* was found to be 44°, when that of the atmosphere was 61°; specific gravity 1006.2; the discharge about four gallons per minute; and the water is kept

in constant agitation by the escape of carburetted hydrogen gas. It is pleasantly saline to the taste, but not at all bitter; and by exposure to the air, it gradually deposits a white sediment of earthy carbonates.

"The 'saline spring' is very similar to the last, but in reality less strongly saline. Its temperature was 45 F., that of the air being at the same time 60 F. The specific gravity is 1005.824. Its re-action is more strongly alkaline, but otherwise the results of its qualitative examination are similar to those given under the head of the 'gas spring.' It contains no sulphuretted hydrogen whatever; some few bubbles of carburetted hydrogen are evolved, but the quantity is very small. The discharge from this spring is about ten gallons per minute.

"The 'white sulphur spring' is situated very near to the last; the openings of the two wells being not more than four feet apart. Although it bears the name of a sulphur water, its claim to that title is very small. It has a feebly sulphurous taste and odor, and darkens slightly salts of lead and silver, but the quantity of sulphur existing either as sulphuretted hydrogen or as alkaline sulphuret is very inconsiderable, and cannot be quantitatively estimated by the ordinary processes.

"The temperature of the spring was found to be 46° F., that of the air being 60° F. The specific gravity of the water at 60° F. is 1003.7.

"The 'intermitting spring' is situated about two miles distant from the others, and rises out of a bank of clay near the edge of a brook; a well has been sunk nearly thirty feet through the clay, and the water rises near to the surface. It is kept in almost constant agitation by the evolution of large quantities of carburetted hydrogen gas; the water from this cause, is kept constantly turbid by the quantity of clay diffused through it, and it is only after being allowed to stand for several hours in a quiet place that it becomes transparent. The discharge of gas is not regular, some minutes often elapsing, during which only a few bubbles escape from time to time, after which a copious evolution occurs for a few moments, followed by another period of quiescence; from this

peculiarity, it is named the intermitting spring.

"The temperature was found to be 50° F. at the bottom of the well, while that of the air was 61°.

"This was sensibly stronger to the taste than the water at the spring, and unlike the previously described waters, was disagreeably bitter, as well as saline. Its specific gravity was 1010.939."

From the above details, it may readily be conceived that the medicinal reputation which these springs have acquired, is not undeserved.

The next, and even most remarkable mineral spring in Upper Canada, is the "Tuscarora Sour Spring," in the County of Wentworth.

"This spring is situated in the Indian Reserve, about nine miles south of Brantford, and three miles south of the bank of the Grand River. The country for some distance around is thickly wooded, but in the immediate vicinity of the spring, is a small clearing, upon a rising ground, on one side of which is the spring, in an enclosure eight or ten rods square. In the centre of this, is a hillock eight or ten feet high, made up of the gnarled roots of a pine now partially decayed. The whole enclosure is covered with crumbling rotten wood; and resembles a tan-heap; upon digging down eighteen inches, the same material was found, apparently derived from the crumbling away of the trunk of the once huge pine whose roots now occupy the centre of the enclosure. The whole soil, if it may be thus designated, is saturated with acid water, and the mould at the top of the hillock, as well as without the enclosure is strongly acid.

"The principal spring is at the east side of the stump, and has a round basin about eight feet in diameter and about four to five feet deep; the bottom is soft mud, and there is no visible outlet; and at the centre a constant ebullition is going on from the evolution of small bubbles of gas, which is found on examination to be carburetted hydrogen. The water is slightly turbid and brownish-colored, apparently from the surrounding decayed wood, which indeed forms the sides of the basin. It is strongly acid and styptic to the taste; and at the same time decidedly sul-

phurous; a bright silver coin is readily blackened by the water, and the odor of sulphuretted hydrogen is perceived for some distance round the place. Within a few feet of this, was another smaller basin, evolving gas more copiously than the other, and somewhat more sulphurous to the taste, although not more acid. In other parts of the enclosure there were three or four smaller cavities partly filled with water more or less acid, and evolving a small quantity of gas. The temperature of the larger spring was 56° F., that of the smaller one 56° near the surface, but on burying it in the soft mud at the bottom it rose to 60.5°. The specific gravity was found to be 1005.583."

The "Charlotteville sulphur spring," another remarkable and comparatively little known mineral spring, rises near the bank of a creek, a few miles west of Simcoe, and assumes the form of a small natural basin, from the southwest end of which a stream is discharged into the creek of about sixteen gallons per minute. The temperature was 45, when the air was 22; while that of the creek was 49.*

"The water rises gently through several apertures in the soft mud of the bottom, occasionally accompanied by bubbles of gas. In a still day the surface, with the exception of a small area about the source, is coated with a film of sulphur, which also covers the bottom of the basin. Leaves and sticks near the outlet, are found thickly incrustated with the same substance, or rather with a mixture of sulphur and carbonate of lime. The proprietor of the spring informed Mr. Hunt, that he was in the habit of gathering the substance thus deposited, and burning it under his bee-hives for the purpose of stupefying the insects while extracting the honey, perhaps the only economical application which can be made of the sulphur itself. The specific gravity of the water is 1002.712; it is limpid and sparkling, its odour strongly sulphurous, and its taste pungent with something like sweetness, leaving an impression of warmth in the mouth for some time.

The great peculiarity of this water is

* See Report of 1847-8, page 150 to 157.

the unexampled quantity of sulphuretted hydrogen it contains. The strongest of the celebrated Harrowgate Springs yield but 14 cubic inches of sulphuretted hydrogen gas to the gallon, while the Charlotteville contains in the same measure 26.8 cubic inches. This, added to its saline ingredients, cannot fail to give the waters great medicinal virtues. The spring is not extensively known, but is used by some of the country people with great advantage in cases of rheumatism. When taken in doses of a pint or more it acts as a mild aperient; but its effects seem principally determined to the skin and kidneys, acting as a sudorific and diuretic.

"I desire, concludes Mr. Hunt, to call especial attention to this mineral water, which I am convinced will be found to be of great importance. I am not aware of any sulphurous water in Canada or the United States which is comparable with it. The discharge is abundantly adequate for the supply of baths, and the location of the spring is such as to make it easily accessible; it is in the midst of a pleasant and fertile country, and but a few miles from Lake Erie and from Port Dover."

For particulars respecting the intense ly bitter and saline spring, and the sulphur spring near Ancaster, we must refer the reader to the Report of 1849; (page 160 to 162) that we may be able to devote some small space to the most remarkable of the many mineral springs in the Lower Province, namely, those of Varennes, St. Leon and Plantagenet.*

"The Varennes Springs are upon the southern border of the St Lawrence, about seventeen miles below Montreal, and rise through strata which though concealed by the tertiary clay of the valley, belong either to the upper portion of the Utica slates or the lower beds of the Loraine shales. They are pleasantly situated about a mile and a half below the church of Varennes, at the base of a little ridge which runs along at a small distance from the shore, and bounds a fine tract of meadow land. A century ago they were greatly resorted to, but of late years have fallen into unmerited neglect.

The springs, which are two in number, are very similar in their sensible properties; the outer spring, which is distant about a hundred rods from the house that encloses the other, is the one generally resorted to for drinking, and is called by the villagers by the way of distinction the "Saline," while the spring within the house, from the immense quantity of carburetted hydrogen which it evolves, is known as the "Gas Spring." Within about ten feet from this is another well, but the water has the same level and temperature as the last, and is said to belong to the same basin. The temperature of the two springs is somewhat different; on the 18th of October that of the outer well was 47°.5 F., and that of the inner one 45°.5; the air being at the same time 44°."

"The St. Leon Spring is situated in the valley of the Riviere à la Glaise, about a mile from the church of the Parish of St. Léon. It rises through the clays of the region which there rest upon the Trenton Limestone. The water of the spring is clear and strongly saline, and is kept in constant ebullition by the escape of large quantities of carburetted hydrogen gas; the discharge from the spring is very considerable; the temperature of the well was found to be 46° F. the air being 42°. The specific gravity of the water at 60° is 1.011.23; its taste is at the same time markedly saline and ferruginous, and a qualitative analysis shewed the presence of Chlorids, bromids and iodids of sodium, potassium, calcium, magnesium; minute quantities of barium and strontium were likewise detected, and carbonates of lime and magnesia as usual, with small portions of alumina, carbonate of iron, and silica."

The Caxton Spring is situated on the Yamachiche River, which here flows between abrupt lofty clay banks, and rises in the narrow valley at 150 feet of the hill near the river, and but a few feet above the ordinary level. The water is remarkably transparent, and rises with great force, accompanied with volumes of carburetted hydrogen gas, which keeps it in constant ebullition. The discharge is from six to eight gallons per minute; the temperature wa

* See Report of 1849, p. 48 & 61.

49, when the air was 44; the specific gravity at 60° F. was 1010.36, and it was strongly saline, but less bitter than the St. Leon water, which it resembles.

The Plantagenet Spring, which has quite recently been introduced to notice, and acquired considerable repute, is in taste strongly saline, and more bitter than that of Caxton; by analysis it shews the presence of alkaline and earthy chlorides with portions of bromine and iodine, besides carbonates of lime and magnesia, with traces of carbonate of iron; and its specific gravity at 60° F. is 1009.39.*

After a careful and minute analysis of all these waters, Mr. Hunt observes as follows:—

“The similarity between the last three waters is very close both in the nature and quantity of the ingredients which they contain. It will be observed that the St. Léon contains, like the sources of Varennes, baryta and strontia, but in much smaller portions; while that of Caxton is distinguished by the large amount of earthy matter which it contains. These three springs, with the Intermittent of Caledonia, constitute a well defined class of saline waters, which are contrasted with the other sources of Caledonia, and those of Varennes. In the first class all of the soda and portions of the lime and magnesia exists as chlorids, while in the second the quantity of chlorine is not sufficient for the alkaline bases, and all the lime and magnesia, with a portion of the soda, exist as carbonates. From the presence of carbonate of soda these waters are alkaline and will possess different medicinal powers from the others, which contain chlorids of calcium and magnesium; the medicinal action of these two salts, and especially of the chlorid of calcium, is so well marked that their presence ought not to be disregarded in estimating the therapeutic value of a mineral water. The distinction here drawn is therefore one to which I would call the attention of the medical profession.”

* Another very strong saline spring, termed the “Georgian Spring,” has lately been discovered; but it does not appear to differ materially from that described.

Having now concluded our meagre sketch of Mr. Hunt’s analytical investigations as regards our mineral springs,* we contemplated following it up with a rapid glance at another branch of his scientific labours,—of great interest in an agricultural point of view,—namely, his analysis of various soils including peat from different parts of the Province; but having already more than exhausted the space allotted to us, and it being our intention at some future time to venture upon a few observations on the existing state of agriculture in Canada, in connection with a brief notice of our two Agricultural Periodicals, combined with the Report of a Special Committee of the House of Assembly on the agriculture of Lower Canada, and the expected appointment of a Professor of Agriculture in the University of Toronto, we prefer incorporating our intended remarks with what may be thrown together on that occasion, and content ourselves at present with merely stating, that during a part of the past season, Mr. Hunt’s attention was devoted to the collection and analysis of a great variety of characteristic soils, from both sections of the Province, with a view of ascertaining not only their existing state, but also their natural constitution, when neither enriched by manure nor exhausted by long tillage; and that the results tend to prove that Canada may boast of as rich soils as any country in the world, and that even the most exhausted lands of the Lower Province may by a reasonable system of cultivation be speedily brought to yield fully as profitable returns as those of any of the neighboring American States.

Our review of the labors of our talented Geologists being at length brought to a close, we cannot in con-

* For the particulars of Mr. Hunt’s analyses of minerals and metallic ores, we are compelled to refer our Readers to the Reports.

clusion, refrain from cordially congratulating them, as well as the Province on the highly beneficial results already produced to the country, and wishing them continued success in their future operations; at the same time that we cannot resist expressing our utter surprise and regret that neither Government nor Parliament should have yet become sensible of the propriety of extending the objects of so creditable a national undertaking to *every branch of natural history*, as has been done in the neighbouring American States: or, at least, of providing some suitable public building for the reception and arrangement of the various geological and mineralogical specimens accumulated from every part of the Province,—instead of this being, as at present, either huddled together in packing cases in a dark cellar, or made to occupy a temporary space in *hired rooms*, altogether unsuited for such a purpose; and we would therefore once more earnestly recall attention to the following observations made by us on the same subject more than three years ago,—though perhaps, to judge from experience, with as little chance as ever of their producing the desired effect:—*

“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.

“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 labours were limited to an equal number of districts, into which the State was portioned off for the particular purpose,) a botanist, a zoologist, a mineralogist and chemist, and, subsequently, a palæontologist, devoted solely to the study of organic remains.”†

Whether such an arrangement as that contemplated be likely to take place or not, we may at all events rejoice to think that, as the various specimens of our industrial resources displayed at the late Provincial Exhibition in this city, and since transmitted to England, to form a part of the approaching world-wide assemblage of natural and artificial productions, in the British metropolis, will

† In the event of the foundation of so creditable a public institution as above described, no better site for the Central Museum could be selected than Montreal, as destined to be ever the principal city, though not the capital of Canada; and no better existing edifice could be set apart for such a purpose than the mansion now occupied by a remnant of the establishment of the Crown Lands Department. The position of the Branch Museums would, we presume, depend on the local position of our Provincial Colleges.

* See Med and Phys. Jour., vol. 2, p. 96.

assuredly tend to raise Canada in the estimation of the commercial world, so also will the partial selection of useful and valuable economic materials, then exhibited, attract the attention of philosophers of every nation in Europe, towards many interesting features in the geology of Canada; and that the *results*, also, will be highly interesting in a philosophic point of view, as well as prove of much benefit to this Province, we have little doubt; and we shall, therefore, continue to look confidently forward to the realization of "a consummation so devoutly to be wished,"—and in the mean time permit ourselves to feel some degree of excusable pride in having more than once, through the medium of this Journal, been the humble instrument of endeavouring to impress the government and the public with a right estimation of a great national object, which, however lightly appreciated at present, will assuredly exercise a most important influence on the future prosperity of Canada.

L.

PRACTICE OF MEDICINE.

Case of Partial Muscular Atrophy, under the care of M. RAYER.—There is a form of disease which, although extremely interesting, has escaped, to a considerable degree, the notice of writers, of which M. Aran has given a complete history in the two last numbers of *Archives de Médecine*. This disease, to which M. Aran has given the name of *progressive muscular atrophy*, consists in an atrophy which begins in one or more muscles, and gradually extends to a great part of the muscular system, without the general health at first suffering in any way. It was vaguely pointed out by Van Swieten, who attributed it to lead poisoning. Sir C. Bell also refers to a case, which he attributed to local lesion of the nerves. A case is mentioned by Abercrombie; and two others are recorded in English journals. Such was the amount

of knowledge thereon when M. Aran, having seen a case of the kind under the care of M. Rayer, directed his attention to the subject, and has since collected eleven cases, of which he has published a detailed account.

Without pretending to give a complete analysis of M. Aran's essay, the following may be stated to be the chief points and most important conclusion;—The weakness is confined to one member, and is increased by fatigue and the action of cold. The first symptoms are slight cramps and twitchings of the muscles; followed by emaciation and disfigurement of the limb, so that its actions are more or less interfered with. The atrophy always begins in the superior extremities, and most frequently in the right. The interosseous muscles are usually the first affected. The ultimate consequence is, that the muscular fibre is transformed into cellular or fatty tissue,—such, at least, was the character of the sole instance of degeneration in which an autopsy has been made. M. Aran concludes that the muscular structure is the exclusive seat of the disease, which he considers to consist in the outset, in an excessive irritability of the muscles, which does not suffer them to retain the nervous influence which incessantly reaches them.

With regard to the etiology, prognosis, course, and diagnosis of the affection, but little can at present be said, so few have been the cases in which it could be observed.

It attacks men more frequently than women (9 in 11 of the cases recorded by M. Aran). It is a disease of adult age: the mean age of the eleven cases has been thirty-six years. The causes which have seemed to give rise to it are excessive, partial, or general labour. Its progress is slow, although in the course of a few months it may include a large number of muscles. It is a very serious disease as its tendency is always to a fatal termination. To the present time it has in every case withstood both local and general treatment.

This affection is distinct from paralysis in which the atrophy is consecutive upon loss of motion; whereas in progressive atrophy, motion remains so long as the muscles are not completely destroyed. In the latter also, all the general symptoms of cerebral or spinal disease are wanting. Hysterical paralysis does not

produce atrophy of the muscles. Rheumatic paralysis is confined to the muscles of one region only. Saturnine paralysis is usually limited at first to the extensors of the hand. Lesion of a nerve affects only those muscles to which it is distributed. The last pointed diagnosis of affection is electricity, which has no influence on atrophy of the muscles, but which induces spasmodic action of paralysed muscles.

There is, however, one disease with which it might be mistaken—that is, general paralysis without insanity. The course and symptoms of both are much alike: general paralysis, however, generally commences in the lower extremities with numbness and tingling of the feet—rarely with cramps; it slowly reaches the upper extremities, and involves the speech, causing death when it has arrived at the upper part of the trunk.

After the preceding brief sketch of the disease, the following case, under the care of M. Rayer, will illustrate its study:—

—Gromas, forty-one years of age, admitted on the 4th of November: has had good general health; suffered from pleurisy when four years old: disowned excesses of any kind, neither had he known want; had never worked at any saturnine employment, nor had venereal disease nor rheumatism; was a mason by trade, and had never been overworked: his disease dated seven or eight months; it began with severe pain in the right knee after having been employed during a day in paving. From that time he continued to suffer more from fatigue, although he had not discontinued his work until the day of his entrance into the hospital. He had noticed that his left thigh had decreased in size. This limb presented considerable emaciation, especially anteriorly, where the flesh was soft and flabby. Movements of the limb were executed with difficulty; flexion was more easy than extension. The rest of the muscular system presented no alteration. He has never experienced cramps or subsultus. The sensibility of the surface was intact. All the vital functions were duly performed.

The remarkable feature in this case is the seat of the disease, in the absence of the ordinary causes and progress: in all other known cases it has commenced in the superior extremities; in this case it had begun and had been limited for eight months to the left thigh, and as yet

manifested no disposition to extend to other regions. The cause, in the present instance, is involved in complete obscurity.—*Lon. Med. Gaz.*

Tubercles of the Brain.—By E. COPEMAN M. D., Norwich.—1. *Chronic form of Cerebral Tuberculation.*—This generally makes its appearance at a time when the health is so good as to lead to no suspicion of the existence of tubercular deposit; more rarely it is preceded by symptoms of tuberculation—general or local, primary or secondary. It generally begins with violent convulsions, analogous to attacks of epilepsy; less frequently the convulsions are partial. Sometimes they are the only cerebral symptom, but at other times are accompanied with headache, vomiting, &c. In the other cases the commencement of the attack is marked by severe headache, lancinating or throbbing, general or frontal, continued or intermitting; sometimes isolated, sometimes accompanied with other nervous symptoms, such as sadness, apathy, strabismus, uncertainty in walking, &c. In a few cases paralysis of one side of the body, or loss of sight, preceded or not by vomiting, are the first symptoms observed. Occasionally it is ushered in by rigidity of the muscles of the neck, or by exalted sensibility, with diminished intelligence. And lastly, the disease may commence with acute symptoms like those of the first period of meningitis, as headache, vomiting and constipation.

Progress.—The convulsions re-appear at intervals, and are followed by muscular debility, paralysis or rigidity; or diminution or loss of sight, strabismus, dilated pupils, and loss of intelligence. Sometimes headache predominates, the paroxysms being violent and lasting several hours; there is generally more disorder of motility than of intelligence; the latter being often not much perverted until an advanced period of the disease. As the disease progresses, the evacuations are involuntary; the pulse and respiration become accelerated, and the symptoms before enumerated continue, except headache, which generally disappears.

Termination.—Death sometimes occurs from the natural progress of the cerebral lesion; at other times, from the supervention of tubercular meningitis, or

acute hydrocephalus, or from a violent attack of convulsion; and more rarely, from some disease unconnected with the principal malady.

The duration of this form of tubercular disease is generally from three to seven months, sometimes it lasts from one to two years, and in a few cases even longer.

2. *Chronic Tubercular Hydrocephalus* very frequently accompanies chronic tubercularization of the brain; we have met with it twelve times in twenty-five cases. It seldom shews itself under two years of age, commonly between four and nine years. In one case it appeared at the age of three months, and in another, it was in all probability congenital; and it is usually of longer duration than simple tubercularization of the encephalon.

3. *Acute form of Cerebral Tubercularization.*—This disease is generally preceded by symptoms indicative of general or local tubercularization, and comes on with violent and frequent attacks of convulsions, sometimes followed by coma and rapid death. When it is of longer duration, various symptoms, such as headache, partial paralysis, dilated pupils, strabismus, and occasionally also vomiting and constipation, appear in the intervals between the attacks of convulsions. The duration of this form varies from two to three days. After death, appearances of meningitis are discovered as well as tubercles, and it is difficult to determine to which disease the symptoms were attributable. But considering that meningitis never begins with convulsions, and that in one case the acute convulsive form was observed in a child affected with cerebral tubercle without inflammation of the membranes, we are naturally led to the conclusion that this form occurs in connection with the existence of tubercle of the brain and its consequences.

Paraplegia generally coincides with tubercles in the cerebellum. Hemiplegia or partial paralysis results, in general but not always, from the development of tubercle in the opposite side of the brain. Ramollissement of the substance of the brain around the tubercle, does not necessarily occasion paralysis.

Diagnosis.—In forming a correct diagnosis the following particulars are of great value:—

1. The age of the child, the cerebr-

form being much more frequent after, than before, the age of three years.

2. The circumstances which preceded the attack, and particularly the causes under the influence of which the disease was developed.

3. The state of health at the period of invasion.

4. The primary symptoms,—as convulsions, lancinating headache, (continued or intermitting,) paralysis, amaurosis, and, much more rarely, rigidity.

5. Lesions of the cranial parietes, exophthalmia, nasal or auricular discharge coinciding with cerebral symptoms, or having been preceded by continued vomiting.

6. The chronic progress of the symptoms deserves especial consideration, for time alone will sometimes discover the nature of the disease. Chronic symptoms, with reference to motility, are more to be depended upon than disorders of the intellect.

7. It is necessary also to keep in remembrance the great frequency of tubercular disease in childhood, and the frequency of other kinds of chronic cerebral disease.

The diseases with which tubercles of the brain may be confounded, are either organic or functional. Of the former:—1. Meningitis. 2. Hypertrophy. 3. Hydatids and cancer of the brain. 4. Chronic arachnoidean hæmorrhage. 5. Chronic hydrocephalus. Of the latter:—Convulsions, rigidity and paralysis.

When tubercular disease of the brain begins with the symptoms of meningitis, without convulsions, it is impossible to denote the characters by which these two diseases may be distinguished, until a more advanced period of the malady. When it presents itself under the chronic form, it is necessary to establish the diagnosis, to distinguish cases in which it commences with convulsions from those in which it is announced by other cerebral symptoms. In the former, it may be confounded with hypertrophy of the brain, chronic arachnoidean hæmorrhage, convulsions, and epilepsy; in the latter, with hydatids and cancer of the brain, chronic hydrocephalus, and rigidity.

The circumstances which precede the convulsions are the guide in cases of this nature. For instance, a child has a large head, which has increased in size

in a disproportionate manner, without producing well-defined cerebral symptoms. If, under these circumstances, an attack of eclampsia supervene, followed by nervous symptoms in a chronic form, we may suspect the case to be hypertrophy, arrived at its 2d stage.

2. Chronic arachnoidean hæmorrhage, attended with some enlargement of the head, and simulating hydrocephalus, may be mistaken for hydrocephalus resulting from cerebral tubercles. The diagnosis is based upon the following considerations:—The age of the child:—Chronic hæmorrhage in the form of hydrocephalus being a disease which occurs exclusively in children under three years of age, whilst hydrocephalus from cerebral tubercles is rare before that age. The mode of attack:—Tubercular hydrocephalus being frequently preceded by convulsions, whilst this symptom is more rare at the commencement of arachnoidean hæmorrhage.

3. Cancerous tumors.—The only characters by which we can here arrive at a probable diagnosis, are:—the previous history, hereditary disposition to scrofula, signs of tuberculization, (general or local,) and especially the great frequency of encephalic tubercles in children compared with the extreme infrequency of other kinds of cerebral disease. But we find, in authors, cases of hydatids and cancerous tumors of the brain which have followed a course precisely similar to that of cerebral tubercles.

4. Idiopathic epilepsy, like cerebral tubercles, begins with convulsions; and it may happen, that after a first attack we observe derangement of the general health, slight pyrexia, vomitings, and various disorders of motility—symptoms which do not present themselves after succeeding attacks. It is, therefore, of the greatest importance in cases of this nature, not to pronounce hastily, but to suspend our judgment for a few days. If epilepsy be essential, the child will maintain a state of perfect health; whilst, if it be connected with the existence of cerebral tubercles, there will almost necessarily be more or less disorder of motility, or of the intelligence.

5. Essential rigidity of the extremities is sometimes difficult to distinguish from that connected with cerebral tubercles. The following considerations will aid the diagnosis:—

This symptom very rarely marks the commencement of the latter disease, because it depends upon softening; which is always consecutive. When it does take place at the commencement of the attack, the stiffness exists not only in the fingers and toes, but also in the muscles at the back of the neck.

Moreover, essential rigidity is but a symptom of some actually existing acute disease, general or local, and is not attended with the cerebral symptoms. And, lastly, under appropriate treatment, it has a tendency to disappear rather than to increase.

6. Essential paralysis of the extremities is a rare affection. It is distinguished—1st. By its mode of attack, the paralysis being instantaneous and complete; whilst it generally comes on gradually when caused by cerebral tubercles. 2nd. By the absence of every other nervous symptom, except loss of motion. It also occurs in very young children, whereas the paralysis of tubercular cerebral disease occurs principally in those who are more advanced in life.

The prognosis is always unfavorable; indeed we are not cognizant of a single well authenticated case of recovery.

Children are most liable to cerebral tuberculization, with symptoms, from three to ten years of age; it rarely occurs at an earlier period, and very seldom from eleven to fifteen years. Boys appear to be more subject to it than girls.

Age and Sex of Twelve Children affected with Tubercle of the Brain.

From 3 to 5 years.....	6	{ Boys 4
		{ Girls 2
From 6 to 10½ years.....	4	{ Boys 3
		{ Girls 1
From 11 to 15 years.....	2	{ Boys 1
		{ Girls 1

Treatment.—The obscurity of the diagnosis interferes with the employment of any rational method of treatment; and, unfortunately, when the disease is recognized, there can be, as in other tubercular affections, but little hope of cure. Attention should be directed—1st, to the intimate nature of the disease; and 2nd, to the mode of attack and the nature of the symptoms. These two considerations are often the only ones by which the practitioner can be guided in his treatment. The preparations of iodine are indicated in this as in all other scrofulous affections, and should be employed both internally, and externally in the form of ointment rubbed upon the head, or spread on lint and laid upon the scalp.

Iodine baths may also be used. If iodine cannot be borne, or fails to produce any good effect, steel and bitter tonics may be substituted for it. A seton or issue may be applied to the arm or back of the neck. Blood-letting and other antiphlogistic remedies are inapplicable, unless the case is attended with acute symptoms indicative of inflammation. The diet should be nutritious without being stimulating, and the child should be out as much as possible in the open air.

Although the tubercles of the brain and membranes most commonly occasion the dangerous symptoms before described, it may happen that they produce only slight derangement of the cerebral functions, or go through their whole course without giving rise to symptoms leading to the suspicion of disease in the encephalon. The pathological anatomy of latent tuberculation is the same as that of regular meningitis, with the addition of appearances of chronic inflammation of the meninges.

Whether tubercles arise primarily in the bony tissue, or in the brain or its membranes, they occasion alterations in the cranial parietes when they come in contact with the bone. When the tubercle originates in the membranes and consecutively extends to the bones, it corrodes and at last perforates them. When it originates in the bone itself, it may be encysted or infiltrated, and produces disorganization of the bony tissue, the result of which is also perforation, and the establishment of a fistulous opening by which the cranial cavity, or that of the organs of senses, communicates with the external air. When tubercles are situated upon the orbit, or cribriform plate of the œthmoid bone, they may occasion serious disease of the eye or exophthalmia, or destruction of the interior of the nasal fossæ. In four cases we have found complete destruction of the membrane of the tympanum. The internal ear was converted into a large hollow filled with a thick greenish fluid, with a number of small portions of bone floating in it. In three of the cases it was impossible to discover any vestige of the parts belonging to the internal ear; whilst in the fourth, a large splinter, detached from the interior of the petrous portion of the temporal bone, contained the cochlea and part of the semicircular canals. We also found the auditory and facial nerves, where

they enter the auditory foramen; but could not trace them into the interior of the abcess. In two cases the petrous portion of the temporal bone, examined at the interior of the cranium, presented no appreciable alteration; the dura mater retained its ordinary color and consistence; it was detached easily from the bone; the bony tissue beneath it showed no trace of vascularity; in the other two cases the dura mater was diseased. In two, there was a large perforation behind the ear, communicating with the interior of the auditory foramen.

It is difficult to determine from what point these serious lesions take their origin, but we are inclined to the opinion, that the bone is primarily affected. Two encysted tubercles were very evident on the side of the large cavity above described. The encysted tuberculous matter probably became softened, and this softening converted the internal and middle ear into a single cavity bathed in pus; and afterwards the membranes of the tympanum became ulcerated, and allowed the pus to escape externally. In none of the four cases was the disease of the bone similar to caries; the bony tissue was neither black, soft, nor crepitating, but only infiltrated with pus or separated into large sequestra. The substance of the brain in the vicinity of the diseased petrous bone was healthy, except in the cases in which the dura mater covering its posterior surface had been destroyed or inflamed. All four children were scrofulous in the highest degree.

Symptoms.—After the occurrence of suppuration, and the escape of pus from the ear for two or three months, paralysis of the face supervenes; but it is limited to motion, the sensibility of the integuments remaining. This symptom is of great importance, since it clearly indicates disease of the osseous structure around the motor nerve of the seventh pair. It is important also to notice whether any small portions of bone escape externally with the discharge.

The prognosis of tubercular disease of the petrous portion of the temporal bone is always unfavorable; because, on the one hand, this affection leads us to apprehend the existence of tuberculation of the brain and other organs; and on the other, because it never can be cured without complete deafness, even supposing it limited to the petrous bone.

With respect to the question,— Whether the otitis be the cause or effect of an encephalic inflammation, we have no doubt—1st. That the disease of the bone is scarcely ever the result of disease of the brain. 2d. That the cerebral affection is in most cases simply a coincidence. 3d. That when disease of the encephalon exists in the part corresponding to the alteration of the bone and dura mater, the inflammation has unquestionably been transmitted from the ear to the brain.

Treatment.—This should be both general and local. The former is the same as for tubercular disease. The local treatment consists of the free employment of emollient injections into the interior of the ear, in order to prevent an accumulation of purulent matter. One or two leeches may be applied near the concha to prevent engorgement of the membrane lining the auditory meatus. Perhaps also the canal might be touched very lightly with nitrate of silver. If an abscess in the mastoid process have preceded the discharge, it should be opened. Issues, setons, &c., have been advised to be applied to the back of the neck as revulsives.—*Prov. Med. and Sur. Jour.*

On the Treatment of Bronchocele by Compression. By WM. C. DWIGHT, M. D., of Moscow, N. Y.—Although Goitre is by no means common, yet it is not so rare in some districts of our country as not to require attention.

Many cases were brought under my notice when Iodine had become the fashionable remedy, and my patients were advised in regard to its use. All the precautions were taken to have them guarded from the effects of imprudent use of this medicine, yet, more than once, I was forced to witness distress for breath, and palpitation of the heart, which I could attribute to nothing but the Iodine, and this, too, before there was any sensible diminution of the deformity. It was found, moreover, that this was an evil to be expected, as prudence is not common at the age of patients of this class. Under such circumstances, it was desirable to look about for a safer remedy, and it was determined to try pressure. To produce sufficient pressure without impeding respiration, resort was had to the following mode of proceeding:—

Three straps of good glazed brown cambric were spread with Emp. Ol. Lini cum Plumb. Sem. Vit. Oxid., each of

^{*I prefer this plaster as I know of no other of equal adhesive property, which produces so little irritation} half the width of the tumor, and of length sufficient to reach from the lower edge of the scapula of one side obliquely up the opposite side of the neck and across the lower part of the tumor, passing thence onward in return to the upward direction down to the lower edge of the opposite scapula, crossing like suspenders. The strap is drawn quite tightly, producing very considerable turgescence of the blood vessels of the face. The patient will shrug up his shoulders for a few minutes until the Thyroid vessels become compressed sufficiently to enable him to breathe more comfortably, and the countenance resumes its natural appearance. Five minutes is all the time ordinarily required. The second strap is then passed in the same manner across the upper part, from half an inch, to an inch, from the first, according to the circumstances of the case, such as length of neck, size of tumor or situation and form. This strap is drawn as tightly as the first. After waiting until the countenance allows a new application, the strap is put on in the same manner over the intermediate space in like fashion.

Ordinarily the plasters will adhere in cool weather from ten days to a fortnight, when, becoming loose and non-adherent, they ought to be removed. If the pressure has been well applied, the tumor will be found to have become slightly less, the skin somewhat reddened and tender. In such cases it is prudent to wait until it assumes its natural appearance before a new application of the plasters.

The first application has in one case been sufficient, but the average has been as high as four times in each case. When the Bronchocele has become diminished to half its size at the time of the first application, it will continue to disappear without further care. The success which has attended this treatment is such as to warrant confidence. In twenty cases there has been no failure. In the first four, Iodine was used in conjunction with the plasters, and in the twelfth it was used antecedently for several weeks without diminution of the disease. In these cases the progress was no more rapid than when no Iodine

was used. In two of the cases the disease returned at the end of two years each, but on a new application of the straps was immediately overcome, and although ten years have elapsed since the last application, all is as well yet as though there had never been any deformity. It is proper to add, also, that in both of these cases Iodine was freely taken as well as pressure used at the commencement.—*Buff. Med. Jour and Monthly Review.*

Cotyledon Umbilicus in Epilepsy.—

Mr. Salter, of Poole, adduces further evidence of the value of the cotyledon in epilepsy, with the addition of more minute instructions respecting its mode of administration. He says that he uniformly recommends that great attention should be paid to the general health, and has been in the habit of laying down a system of dietetics and exercises in accordance with the physical condition of the patient. With few exceptions he recommends the disuse of fermented liquors, and advises his patients to employ tepid sponging during the winter months, and cold sponging, or the shower bath, in the summer.

From the advantage that might be expected from sustaining a proper temperature upon the surface of the body, and preventing congestion of the vital organs, more especially of the brain, he also deems it important to attend to the subject of clothing, his patients therefore are desired to wear flannel next to the skin.
Medical Gazette.

Connection of Erythema Nodosum with the Rheumatic Diathesis.—This connexion has been the subject of a communication from Dr. Begbie. After some remarks upon the advantage of studying the symptoms which indicate the morbid state of organization on which diseases depend, and which are apt to be neglected by the superficial observer, Dr. B. proceeded to describe the eruption and course of erythema nodosum. He then detailed some very interesting cases from his own practice, in which the appearance of the eruption was preceded by a state of general cachexia, resembling that which is observed before an attack of rheumatism. In some of the cases there were deep-seated pains in the limbs and joints, and in the

course of the disease, abundant acid perspirations, and deposit of lithates in the urine. The sulphate of quina had been recommended by Dr. Watson as useful in erythema nodosum, and in Dr. Begbie's practice it had always proved efficacious. The use of bark in rheumatism has been long ago recommended, and still had its advocates among the best informed physicians of the day. The connexion between the skin disease and rheumatism was inferred—1st. Because erythema nodosum, rheumatism, and the rheumatic diathesis, are most frequently, if not exclusively, confined to the young and to those under thirty years of age. 2nd. Because these diseases are frequently associated with disorders of the menstrual function. 3rd.

Because a disordered state of the general health, characterized by pallor, cachexia, and defective excretion, precedes the eruption, and is subsequently developed in febrile excitement, pains in the joints and muscles, and copious lithic urinary deposit—symptoms all common in rheumatism. 4th. The erythema is often associated or alternates with rheumatic fever, and is often complicated with those internal disorders with which rheumatism is allied, particularly pleurisy and pneumonia. 5th. Remedies of reputed efficacy in rheumatism, such as quina, are equally efficacious in erythema nodosum. Dr. Begbie pointed out the practical importance of bearing in mind the connexion which seemed to exist between these diseases, and, in particular, of not neglecting the disordered state of the digestive and assimilating functions—often the only departure from health which the physician is called upon to treat for days, or even for weeks, before the appearance of erythema, or the occurrence of a paroxysm or acute rheumatism.—*Pro. Med. and Sur. Jour.*

Treatment of Psoriasis in the Parisian Hospitals.—M. Emery states that the arsenical preparations, especially Fowler's solution, are the best internal remedies, and pitch ointment, made with one part of pitch and three of lard the best external remedy in psoriasis.—These two remedies, employed together constitute the best plan of treatment for that disease. He never gives more than ten drops of Fowler's solution in the

course of the day, and has rarely found it hurtful. He has observed while using both these remedies together, which he did on the recommendation of Cazenave, that the disease is cured in two different ways at the same time. The scales of the psoriasis are effaced by the pitch from the circumference to the centre, while, by the action of the arsenic, they diminish in thickness, and assume a grey-black colour. The ointment of the proto-ioduret of mercury, prepared with two scruples of the salt to four ounces of lard, may be very serviceable, when it is properly used, but it occasionally causes salivation. The next preparation in utility is the ioduret of sulphur. This is made into an ointment with lard, in the proportion of from one to four scruples of the ioduret to four ounces of lard. It is said, however, to be very irritating to the skin, and even to have induced an attack of erysipelas when made of the full strength, *i. e.*, with four scruples to four ounces. M. Emery tried baths containing seven drachms of the bichloride of mercury in each in twenty-two cases, and persisted in their use for some time, but without benefit. Very violent symptoms were produced by the baths in some cases, and evidences of salivation.—Undaunted by the failure, the baths being recommended by a medical man of high reputation, M. Emery again experimented with them on twenty other patients, eight being cases of lepra vulgaris, four of psoriasis affecting the knees and elbows, four of psoriasis guttata; and four of psoriasis of the limbs and body; some of these could not continue up to the twelfth bath; they lost their appetite and their rest, and their skin became very irritable. Others persisted to the thirty-second bath; but they slept badly, lost their appetite and became emaciated. A boy, fourteen years old, after taking the nineteenth bath, was seized with vomiting and cerebral symptoms, with signs of compression, which were removed by applying two leeches behind the ear; but a nervous trembling of the head and limbs continued for four months afterwards. In none of the cases of psoriasis was the disease cured, and in four it got remarkably worse. At M. Emery's request, M. Gibert, one of the physicians to St. Louis, also tried the baths, with the same want of success. He employed them in fifteen cases.

M. Emery employs the arsenic and

pitch ointment in the following manner:—The patient takes a bath, and the moment he leaves it, he gently rubs in the ointment on the part affected. This is repeated three times a day. At the end of two or three days, he increases the quantity of ointment used, and the activity of the friction. After six or seven days, the patient always has the ointment on him; and when the disease is of old date, M. Emery covers the large patches with compresses spread with the ointment a line in thickness. The patients take a warm bath once or twice a week. This treatment rarely requires to be suspended, except in those persons whose skin is very irritable, on whom some pustules, impetigo, or small boils may form. They often continue the treatment, notwithstanding. In the course of ten days in psoriasis the scales have fallen; a whitish circle surrounds them, and goes on increasing from the circumference of the centre. This shows the decrease of the disease, which generally disappears in two or three months, without the patient's health suffering. In lepra vulgaris, the centre separates, and the rings which constitute the rounded chin come away, and then behave like the patches of psoriasis.

The exhibition of Fowler's solution requires precaution. Five drops should be given at first in four or five ounces of *eau sucrée* in two doses. This is to be increased one drop every second day, until twelve are given, unless dangerous symptoms supervene. When the patches become less thick, and begin to assume a blackish grey colour, the dose need no longer be increased, these symptoms being a sign of saturation. If, on the other hand, these signs do not appear, and the patient bears the medicine well, it may be increased to fifteen or sixteen drops, but rarely to more.—*Bulletin de Thérapeutique*.—*Medical Times*, May 4, 1850.

SURGERY.

Case of Popliteal Aneurism. By JAMES SYME Esq., Professor of Clinical Surgery in the University of Edinburgh.—T. M., aged 35, a seaman, sent from Banff by Dr. Milne, to be under my care, on account of an aneurism in the left popliteal artery, was admitted into the hospital on the 18th of No-

vember. The tumour filled popliteal space, and pulsated strongly. It was first noticed about six months before, by the patient, after lying one night with his leg hanging over the edge of his hammock. He had been either at sea, or actively engaged in harbour duties ever since, and always remarked that exertion was followed by an increase of pain. With exception of occasional rheumatic pains, he had enjoyed good health.

Having come so far, nearly 200 miles, the patient was kept quiet in bed, with restricted diet and gentle aperients, to prepare him for the operation. In the course of a day or two, the aneurismal pulsation became much less distinct, and could not be felt at all on the 23rd, when the tumour was also observed to be greatly reduced in size, and no longer the source of any uneasiness. On the 9th of December, the patient being completely relieved from the disease, proceeded homewards.

A case precisely similar to the one just related, occurred under my care some years ago. The patient having come over from Kirkcaldy in Fife, where he had pursued his occupation as a weaver until the day he was admitted into the hospital, when the perfect rest there afforded was immediately followed by coagulation and the other steps of a spontaneous cure. These facts seem to suggest a suspicion that the one or two very rare instances of pressure being quickly followed by recovery, may really have owed the beneficial change to assistance of the *vis medicatrix*, from rest in the horizontal posture, and not to the effect of compression. Certain it is, that if the two cases just mentioned had been subjected to pressure, they would have appeared triumphant examples of its successful employment. The Dublin writers allege that no confidence can be placed in trials of pressure on the other side of the Irish Channel, accounting for all its failures and bad consequences by attributing them, with characteristic frankness, to prejudice and ignorance on the part of the operator. Well aware of this peculiarity in the estimation of evidence, I have calculated the average length of time requisite for the duration of pressure, from the facts supplied by the advocates of this system. In twenty-three case of aneurism, reported by Dr. Bellingham, from the practice of seventeen surgeons, as successfully treated by

pressure, I find that the average duration, not of the treatment, but of the actual compression, excluding the intervals of its discontinuance, amounted to thirty-eight days. Thirty-eight days and nights of misery, to escape a few minutes of trivial uneasiness.

If the cases treated in the Dublin hospitals since the publication of Dr. Bellingham's work, have been less protracted than those he has recorded, it would be well to acquaint the profession with them. But if this be done, I trust that the results of all the cases will be given together with a full statement of the means required to render the patients able to endure the prolonged torment of compression.—*Edinb. Monthly Jour.*

[Mr. Syme would appear to labour under a kind of monomania respecting compression in aneurism; he seems to be continually haunted by the fear lest the practice should extend north of the Tweed; and he allows no opportunity to pass of decrying the method, and of discouraging its use. The practice, however, rests upon too solid a foundation to be damaged by such means; and if the readers of the *Edinburgh Monthly Journal* are not by this time heartily tired of the repetition of almost the same remarks in each succeeding number of that journal, we must confess that we are; and although we have little hope of convincing Mr. Syme, it is but right we should inform him that, in this country at least, he is perhaps better known as the obstinate opponent of compression, than for his improvements in other branches of surgery. The two cases of spontaneous cure of popliteal aneurism reported above, and to which Mr. Syme has appended his remarks respecting compression, are quite analogous to cases which have occurred in the Dublin hospitals; they argue strongly in favour of the treatment by compression, showing, as they do, that merely tranquillizing the circulation, placing the patient upon a restricted diet, and confining him to bed, may, in certain favourable cases, lead to the deposition of fibrine in the aneurismal sac and to the cure of the disease; in fact, produce exactly the same results as compression when carefully and judiciously applied.—*Ed. Dub. Med. Jour.*]

Ligature of the External Iliac Artery. By Prof. Moit.—On Friday, Dec. 13th, Professor Moit, after some

concluding remarks upon the subject of thoracic aneurism, proceeded to speak of Ligature of the External Iliac Artery. This operation, he remarked, had been first performed by Abernethy, in 1796, but unsuccessfully. He tried it in 1806, with a successful result. He was followed by Messrs. Tomlinson and Freer, in England; while in this country it was first ligatured by Dr. Dorsey, and next by Dr. Wright Post, of this city. Afterwards by Dr. Smith, and others. Dr. Mott described the different modes of operating, and then his own manner of performing it, which he exhibited at the same time upon the subject. He makes a curvilinear incision, commencing just above the external abdominal ring, and extending outwards, and parallel with Poupart's ligament, towards and a little above the anterior superior spinous process of the ilium.

The skin and superficial fascia are divided, and the tendon of the external oblique clearly exposed. This tendon is then cautiously divided to the extent of the external incision, and it is then separated from the internal oblique, and the flap turned up. The edge of the internal oblique and transversalis muscles is then carefully detached from Poupart's Ligament, and turned upwards. A portion of the funnel-like, or tubular process of the fascia transversalis, which invests the cord, is then pinched up and raised by the forceps, and then divided transversely with the point of the knife. The finger is then passed into it, along the cord to the internal abdominal ring. The cord thus serves as a guide to the artery, while, by the above method, we are sure of getting *below* the peritonæum, so as to raise it from and above the artery. In this mode of proceeding, there is less danger of tearing, or otherwise injuring the peritonæum, than in any other plan of performing the operation. Having raised up the bag of the peritonæum, the edges of the wound are to be separated by spatulas, and by the fingers of assistants, so as to enable the operator to get as good a view as possible of the artery, which is then to be carefully separated from the vein which is below and on the inside of the artery; and only to an extent sufficient to allow of the passage of the aneurism needle. In this, as indeed in all cases, the vessel should be disturbed and isolated from its sheath as little as possible. The needle

should be passed *from*, not *toward*, the vein. The artery is tied generally about an inch above Poupart's ligament, and care should be taken before tying it to ascertain that no nervous filaments are included in the ligature. The edges of the wound are brought together by a suture, and slight adhesive straps, but no bandage of any kind should be applied, nor anything which may constrict the limb, or tend to interfere with its circulation. Loose cotton, or some equally good non-conductor of heat should be placed all around the limb, from the toes to the groin, so as to cherish the heat and vitality of the part.

Dr. Mott, in speaking of the Statistics of the operation, stated that he had ligatured this artery seven times—four times with success. Of the three remaining cases one died from secondary hæmorrhage; one from peritonitis, caused by excess in the use of spirituous liquors, and the last from gangrene of the inferior extremity. This was a case of traumatic aneurism, in which the aneurismal sac communicated with the femoral vein.—*N. Y. Register of Med.*

MIDWIFERY.

On the use of Turpentine in Uterine Hæmorrhage.

Communicated by T. T. Griffith, Esq., Wrexham.

To the Editors of the Provincial Medical and Surgical Journal.

GENTLEMEN.—Having learnt from my brother, who practises at Hereford, that he had found the purified oil of turpentine very effectual in arresting uterine hæmorrhages of the most alarming kind, I prevailed upon him to give me the results of his experience in a condensed form, and having received them, I now request a place for their insertion in our *Journal*.

Though he disclaims all merit as a discoverer, I cannot but hope that his exact directions for the use of the remedy, and his account of its effects, will give an increased value, in a practical point of view, to the notices of it by Drs. Denman and Blundell. I have been permitted to inclose also the outlines of two cases communicated to my brother, by Dr. Lingen, of Hereford. Yours faithfully,

T. T. GRIFFITH.

In compliance with your request, enclosed is an epitome of observations on the use and value of *large* doses of rectified oil of turpentine for hæmorrhage. No claim is made to discovery, as Denman and others have recommended it, (see "Blundell's Principles and Practice of Midwifery"); but attention is called to the great rapidity, power, and certainty of its action, in the most formidable cases of uterine hæmorrhage the practitioner encounters.

March 10th, 1847.—Having assiduously but unavailingly employed the best remedies known to me, in a protracted menorrhagia, half an ounce of oil of turpentine was given, as suggested in the valuable work referred to, (p. 181,) which quickly abated the discharge, restored the pulse, and revived the exhausted patient. In four hours the dose was repeated, with a result the most satisfactory.

December 24th, 1847.—Mrs. J.—flooded to an alarming extent after delivery; pulse almost imperceptible; great restlessness; skin cold and clammy; occasional sighing; countenance cadaverous. One ounce of turpentine was given, pressure was made on the uterus, its cavity cleared of coagula, cold wet napkins were applied externally, and yolk of egg with milk was recommended. In a very short time the discharge greatly abated, and the other symptoms disappeared sooner than could have been anticipated. In an hour the woman was able to articulate, and stated that shortly after taking the draught, she "felt a sense of warmth all over, and had a hope of recovering, instead of the feeling that she was dying."

April 16th, 1848.—Mrs. S.—was brought into a fearfully dangerous state, from partial separation of the placenta, prior to delivery; turning was promptly effected, but followed by terrific loss and prostration; the woman resembled a corpse; it seemed as if a few minutes would terminate her existence. An ounce of turpentine was taken, and repeated in five minutes; followed by the most signally happy result, as rapid as gratifying.

Since March, 1847, eleven instances of excessive and dangerous flooding, prior or subsequent to parturition, and six of menorrhagia, have come under my notice where the great value of this remedy has been exemplified. Turpen-

tine is not recommended where there is a full pulse, hot skin, with undiminished strength; and when resorted to, other appropriate means should not be disregarded; as abdominal pressure, removing coagula from the uterus, the external application of cold, and not allowing the patient to be moved, &c.

The most convenient way of using the remedy is by giving an ounce of turpentine with half the quantity of oil of sweet almonds, for a draught. This may be repeated in five minutes if the symptoms are urgent. No unpleasant effect has arisen from such a course of treatment, even when the medicine has remained with the patient for thirty hours. Occasionally vomiting occurs, which is salutary.

The *modus operandi* is that of a diffusible stimulus, bringing on rapid contraction of the capillaries, adapting the calibres of vessels to the diminished column of blood, restoring the cutaneous circulation, and producing a comfortable sensation in the place of extreme coldness and death-like exhaustion.

In the cases of menorrhagia, various remedies had been in succession energetically and perseveringly employed without success, such as nitrate of potass, superacetate of lead, sulphate of zinc, infusion of matico, gallic acid, tannin, very large quantities of cold astringent injections; and in the floodings, secale cornutum, galvanism, strong abdominal pressure, plugging the vagina, external cold, &c.

In some of the cases I had the able assistance of Dr. Lingen, who joins in stating that we know no remedy that could be safely substituted for full doses of turpentine in those dangerous cases that so often threaten, and too frequently have proved fatal, notwithstanding the best devised and the most prompt and energetic use of means.

JOHN GRIFFITH.

Dr. Lingen's Cases.

Mrs. P., labour a little premature, preceded by hæmorrhage, but not from placenta prævia. I was not called to her till she was blanched by loss of blood, and was nearly pulseless. I was obliged to turn with all expedition.—This was soon followed by the most alarming exhaustion I ever witnessed, attended with restlessness and a relaxed state of the uterus. A turpentine

draught was given, with almost instantaneous effects, namely, a glow of warmth, a return of vitality, and a lessening of the discharge, &c., &c. After a few minutes a second draught was given. All hæmorrhage now ceased, and she slowly rallied.

This case, with a few other particulars, forms the second in Mr. John Griffith's series.

Miss _____ suffered from menorrhagia, of a passive painless kind, that had for the fourth time recurred during the last two years, with a continuance each time of five or six weeks. She was pale, breathless on exertion, had noises in her ears, &c., and was at length compelled to recumbency. All the ordinary remedies, general and local, had been employed without success. I now gave her a draught, with one ounce of turpentine; this may be said to have ended the matter, though two small doses were afterwards taken, and more than a month has passed without any return of the discharge.

CHARLES LINGEN.

—*Pro. Med. and Sur. Jour.*

MEDICAL JURISPRUDENCE.

Poisoning by the Seeds of Jatropha Curcas, By R. J. FARQUHARSON, M. D., Assistant-Surgeon U. S. N.—Two of our men, being ashore at Porto Praya, Cape de Verdes, tasted the seeds of the *Jatropha curcas* (which grows in great abundance on these islands), and finding them pleasant, ate of them, one to the extent of a handful, the other being satisfied with three or four. In both cases vomiting and purging of a violent character came on in the course of an hour; and in the instance of the man who had eaten but a small quantity, the effect only extended thus far. In the other case more alarming symptoms rapidly supervened. The muscles of the extremities were contracted by violent spasms; the patient was affected with dizziness and vertigo, accompanied by great restlessness; the respiration was quick and panting; the skin became cold and moist, and the pulse small, thready, and intermittent; the heart's action was very irregular, and so weak that the impulse against the walls of the chest could with great difficulty be perceived. These effects of the poison upon the

nervous system continued for a space of several hours. The seeds eaten were ripe, and of the kind used in small quantities by the inhabitants as an active purgative.

The treatment consisted in free use of anodynes and stimulants, after the continuance of vomiting and purging for a time rendered it probable that all the offensive matter had been discharged from the intestinal canal; together with the application of a large mustard poultice during the state of depression. About five hours after the commencement of the attack, reaction occurred; and shortly afterwards the patient fell asleep, and waked the next morning with no other ill effects remaining than a slight irritability of the stomach and considerable debility.—*Amer. Jour. of Med. Sci.* for July, 1850.

Case of Poisoning with Arsenic, followed by Spontaneous Gangrene of the Lower Extremities. By PROFESSOR FORGET, *Strasbourg*.—A man, aged 63 years, a strong constitution, swallowed, in a glass of brandy, about 60 grammes, or 900 grains, of arsenious acid with intention of self destruction. This occurred at eleven o'clock at night. About an hour afterwards frequent vomiting and purging took place. Not finding death arrive so rapidly as he had expected, the patient attempted to drown himself, but was prevented. When admitted into the hospital, nine hours after having taken the arsenic, his face was pale, he was extremely feeble, his extremities cold, the pulse small and frequent. He experienced violent pain in his abdomen, and presented other symptoms of poisoning by arsenic.

The hydrated peroxide of iron was administered, and at the same time small doses of ether, with sinapisms to the extremities. Reaction followed, and was met by leeching, &c. The symptoms of poisoning had all disappeared by the fourth day. The patient, however, complained of acute pain in the left leg, which was not altered in size or appearance: it was rather cooler than the other, and tender to pressure. Two days later the limb was in a state of gangrene below the knee. The gangrene continued to spread, and the limb was amputated above the knee ten days from the first taking the arsenic.

On the following day the patient was sensibly weaker, and gangrene had shown itself on the stump. Despite the use of every means to arrest the course of the disease, the patient sank on the tenth day after the operation. Dissection of the limb exhibited—1, mortification of all the soft parts; 2, red patches on the arteries, which was obstructed by fibrinous clots; 3, a healthy state of the veins, which contained a few coagula.

M. Forget suggest that the sphacelus in this case was, most probably, in a great degree attributable to the violent reaction which followed, and which was augmented by the brandy in which the poison had been taken.—*Gazette Medicale*.

Magnesia an Antidote for Arsenic.—M. Lucas, of Beauvais, states, that in as many as nine cases of poisoning with arsenic, he has found calcined magnesia arrest the symptoms of poisoning, and remove its effects.—*Journal de Chimie Medicale*.

British American Journal.

MONTREAL, MARCH 1, 1851.

A License Faulty in Principle.—Our attention, as well as that of others, has been directed to the following announcement:

{ Secretary's Office,
Toronto, Feb. 15, 1851.

His Excellency the Governor General has been pleased to grant a License to William Henry Evatt, of Port Hope, Gentleman, to practice *Midwifery* in Upper Canada.

This we believe to be the *second* instance since the year 1819, of an individual having been licensed to practice one branch only of his Profession; the other being that of Mr. George Smith, licensed in 1842. We believe it to be an anomalous proceeding, as regards its effects, and unparalleled elsewhere. If the practice of Midwifery did not involve the principles of the practice of Medicine, we should have little cause to grumble at the course pursued by the Medical Board

of Upper Canada on the occasion specified; but we think they have acted in dereliction of their duty, in licensing an individual to one branch of a Profession only, when the performance of the duties of that branch involves the duties of the branches of Medicine and Surgery also. The Candidate for license, if competent to execute the duties of Midwifery, should be competent to execute the duties of Medicine and Surgery also; if incompetent to discharge those of the latter, he is incompetent to discharge those of the former; and if licensed for the latter, he should be equally licensed for the former—an injustice being done in the one case to the public, in the other to the individual, as he is exposed every moment to an action for unlicensed practice in the departments of Medicine or Surgery. But the worst feature in the affair is now to be exposed: an acquaintance with Midwifery is an easy matter, and we all know what examinations at Medical Boards are, especially when the Candidate is determined to be examined only upon the easiest branch of his Profession, as far at least as examinationis concerned. Once licensed, the practice of the two other departments, of greater moment, are indulged in, and an easy mode of entering into the Profession is at once opened. We have never heard that an action has been taken out against Mr. George Smith for practising Medicine or Surgery; and he is therefore a practitioner duly admitted, upon what we cannot but consider a minimum qualification, yet nevertheless having practised—and practising for aught we know to the contrary—every branch. The law is such in Upper Canada, and it is time that it should be amended; yet we cannot but think that the Medical Board had it in its power to have acted otherwise.

Upper Canada Journal of Medical, Surgical and Physical Science—We have received the Prospectus of a new Journal, to be issued in the City of Toronto, under the above name; the first number to appear on the 15th of April

next, and to be continued monthly at the price of 10s. per annum. It is proposed to be conducted by Drs. Bovell, Hodder, Beaumont, King, O'Brien and Melville, and to contain forty-eight double columns of letter press. In the internal arrangement of matter, it is to vary but slightly from that of this journal.

This journal barely lives at its present subscription price; how the projected one is to live, at a diminished price of 50 per cent, is a puzzler. We nevertheless wish it prosperity.

LICENTIATES OF THE MEDICAL BOARD,
C. W.

Roderick Kennedy, M. D.,

M.R.C.S.L. June 15, 1850

John Wilson Wood. June 15, 1850

John Howitt. July 6, 1850

Christopher N. Hock. July 13, 1850

William Hume. July 13, 1850

Orlando Strange. July 13, 1850

Norman Bethune, M.D.,

M.R.C.S.L. Nov. 2, 1850

George Ryall, M.D. Nov. 16, 1850

Eugene Finn, M.R.C.S.L. Dec. 14, 1850

Amos McCrea. Jan. 11, 1851

Hart Proudfoot. Jan. 11, 1851

Charles Gardner. Jan. 11, 1851

Robert Gibbings Went-

ropp. Jan. 11, 1851

Samuel Miller. Jan. 11, 1851

David Dulmage Wright Jan. 25, 1851

William Henry Evatt* . Feb. 15, 1850.

A Specimen of Thompsonian Science and Education.—When the Bill for Incorporating the Medical Profession of Upper Canada was under its second reading in the Legislative Assembly, on the 26th March 1849, the following sentiments were uttered in opposition to it by several of the members:—

Mr. Flint “opposed the motion as being an undue interference with the rights and liberties of the people, and entirely at variance with the spirit of the age and country. In the back parts

of the country were there were no regular doctors, the people were obliged to employ these Thompsonian doctors; besides, they had a perfect right to employ them if they had confidence in them. In these days of free navigation and free trade, they ought to have a free system of medicine.”

Mr. Merritt “thought these root doctors were doing a great deal of good in the country, and he should vote against the Bill, as it would deprive them of the right and opportunity of doing that good.”

On the debate on the Bill for incorporating the Thompsonian or Root Doctors! on the 5th of April following, Mr. Flint, the sturdy champion of these quacks, after moving the House into committee of the whole, is reported to have delivered himself as follows:—

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 were denied 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. * * * The system of persecution going on against this class of practitioners will raise them in public estimation; and indeed in many of the isolated parts of the country they did a great deal of good. He was satisfied that the more this system was tried the more it would prevail,” &c.

Mr. McConnell “bore testimony to the advantages of medicine composed of roots and herbs. We had, he said, a liberal ministry, who should endeavor to give equal rights and privileges to all men, and they should therefore give these Thompsonian doctors the privileges they petitioned for.”

Any person unacquainted with the facts, reading the foregoing encomiums, would of necessity conclude that these Thompsonians were a cruelly used set, that opposition to their pretensions was founded on motives of jealousy, and

* Licensed to practice Midwifery only.

that the imputations of knavery, imposture and quackery—with which they were liberally treated in the House on the occasion referred to, and by ourselves, more than once—were dictated by some feelings akin to the sordid and selfish; that we thought of ourselves alone, and not of the public upon whom they fed and fattened, and with whose lives and dearest interests they made daily sport. As there is no argument, to our mind, more convincing than the *argumentum ad hominem*, we take this opportunity of contrasting the statements of the three members of the House above alluded to, with the following veritable specimen of the scientific knowledge, and educational progress of one of that genus whom these Legislators delight to honor.

“Look here upon this picture; then on this.”

“A few days since Mr. Wilson waited upon me, in company with a Negro Gentleman for the purpose of enlisting my sympathies in behalf of a poor Mulatto boy, subject to fits, and whom he desired to get admitted into the Toronto General Hospital. I afterwards explained to Mr. Wilson the very great repugnance I felt, at being instrumental in sending any paupers from this place, to be a burden upon the bounty of the Toronto people, who have always a large number of sick and indigent wholly dependant upon charity. I offered to prescribe for the boy myself, on condition that a subscription should be raised for his support, and to procure the medicines; with this understanding the boy called upon me on Friday morning, and having elicited by careful examination the cause of his malady, I wrote a prescription which I directed him to take to Mr. Wilson, to be procured at a Druggists. The following morning I received the subjoined specimen of epistolary style! together with my prescription soiled and torn across:—

To Mr Dr Mack
St Catharines
r
St. Catharines Febuary 1st 1851.
v

Sir I recieved a few lines from you yesterday stating a mixture that you

wished to be given to that young man which has fits
the mixture which you recom mended is entirely against my profession I use no kind of minerals nor druggist in my practice I treat altogether on the reformed practice using roots barks and flowers without the aid of anything else I examined the youngman's pulse some-time ago and as far as my skill goes concerning his fits they are frequently increased by pumping the seman with the hand instead of the uterus or vagina of the female* and under these circumstances it will be very hard to get him rid of them I have cured several persons of fits since I have been living at St Catharines and I would be willing to undertake him *providing I was paid for my trouble*

but I would prefer putting him into a warm bath the first thing and blistering the stomach and after that giving him an injection and a medic after that give him a dose of senna and manna and a decoction of common mullin as his blood appears to have an unequal circulation the blood recedes from the surface and the extremities and is accumulated or effused upon the brain the remedy then is to equalize the circulation

no more at present but
remain yours

Dr LAWSON St Catharines

In conclusion, we may observe that the foregoing is extracted from a letter published in the St. Catherines *Constitutional*, dated 5th Feb. 1851, by Dr. Mack of that city, who is a gentleman well and favorably known to the Profession of the Province; and we recommend it to the careful consideration of the three sagacious and liberal Legislators whose opinions we have quoted, when called upon at the ensuing session to decide upon the pretensions of these Thompsonian humbugs, who have proved themselves a curse in every society in which they have been tolerated. We

* In the St. Catherine's Journal in which this was published, for obvious reasons Dr. Mack had translated this into Latin.

have often remarked, that persons of the greatest pretensions have the least brains—a fact which we leave to Phrenologists to explain. The Thompsonians are worse than the Homœopathists; the treatment of the former is active—that of the latter passive. Homœopathists *let* their patients die—the Thompsonians *kill* them outright, with their lobelia and their cayenne.

Dr. Lawson again.—Since the foregoing was written, another number of the St. Catharines *Constitutional* has been received by us, containing the following additional characteristic effusion from Dr. Lawson's pen. It is valuable, for more reasons than one. His receipt of \$1400 for one year's Thompsonian practice, is a striking commentary on the good sense of the people of St. Catharines, the surrounding country places, and the Legislature which permits it. It seems to be a fact, demonstrable from medical practice, more than from any other source, that there is no humbug so glaring but will meet with its votaries; no ignorance so great but will be overlooked; and that imposture, ignorance, and knavery, can all be concealed by the mask of self-vaunted pretension.

“Dr. Lawson takes the opportunity of relating a few things to the public, hoping it will be no offence to any one as Mr. Dr. Theophilus Mack wrote me a letter concerning young man which has fits and advising me a mixture to give him for fits which was entirely on the mineral practice which I at once refused to give my aid on the mineral system I myself being a botanical Physician and believe not in any mineral whatever to be used in cases of fits or in any other disease belonging to the human system. I also in answering his letter told him that I had examined the young man's pulse sometime ago and as far as my skill and practice consisted that the fits was often increased by the practice I alluded to in my letter to Dr. Mack but it appears by me addressing him in this manner he has taken it as an offence

and not as from a friend who wishes him success in this world as well as his own I also in the letter that I would cure the young man of the fits provided I was paid for my trouble as I had cured several persons which had fits for several years since I have been living in St. Catharines I am prepared to prove it at any time I am also prepared to prove that the young man acknowledges he is guilty of the very act which I stated was the cause of having fits and I ascertained by examining his pulse without asking him any question whatever. I do not think that Dr. Mack is competent by his study or skill to tell the pulse or urine any disease belonging to the human system without asking the patient questions, and I am prepared by a number of gentlemen and ladies in the town of St. Catharines that I have told their disease and every pain and misery that they have about their system without asking them a question at all by examination of the pulse and urine also and that is a thing which he has never been able to do and I am afraid he never will without he come and study me a few years or under some botanic physician of the same profession of which I am myself, he also speaks of me as being a quack or imposter, which ever you may chose to call it, now it is for the public to judge which of the two is the quack or imposer those who will perform the best of those cures for a moderate charge, or those that will charge a great price kill it or cure it is all the same with them, and for the further satisfaction of all I am willing to meet Mr. Dr. Mack, at the Town Hall of St. Catharines first and discuss this matter to public of gentlemen, but no ladies admitted, and from that to the City Hall of Toronto, and from that to the City Hall of New London where I would chose to speak before a board of Doctors, twelve of which must be mineral and twelve botanic doctors, there we would decide the question, and bring home tidings of great joy, as I have beat him first I can beat him last, for he has never been able to perform cures on fits and cancers that I have done since I have been in St. Catharines, and never will be unless he falls upon the plan which I have above mentioned without he come and study with me or with some other botanic doctor of the same profession, and the terms that I will meet him at the Town-hall is for

him to pay one half for the Hall and I will pay the other half, and also for him to set his own time that he will meet me there that it may be put out in hand bills, and in the newspapers that the public of gentlemen may meet us there, and he also seems to begrudge prosperity I do not thank him for that but I thank the public for having taken in 1850 fourteen hundred dollars a good part of that has been from people which has come to me over 100 miles to make inquiry of Mr. Hawkins the agent of the St. Catharines house how many boxes of medicine he has sent into different parts of the province and also Mr. Copeland the post Master of the different letters which has come through his hand

with money for me in this year of 1850, and also to know whether Mr. Dr. Mack has sent any boxes of medicine off afar or whether has any money been sent to him from afar for medicine. I hope Mr. Dr. Mack nor his friends will not take my letter of publication as an offence as I am sure myself and my friends has not taken his an offence. It is to be understood, that Dr. Mack nor Dr. Lawson are not to use any latin in their discourse but to speak all in English, so that it may be understood by all that is present.

No more at present, but yours with respect.

DR. D. LAWSON.

St. Catharines.

METEOROLOGICAL REGISTER at MONTREAL, for the Month of JAN, 1851.

DATE.	THERMOMETER.				BAROMETER.				WIND.			WEATHER.		
	7 A.M.	3 P.M.	10 P.M.	Mean.	7 A.M.	3 P.M.	10 P.M.	Mean.	7 A.M.	3 P.M.	10 P.M.	7 A.M.	3 P.M.	10 P.M.
1	+17	+21	+0	+19.	29.50	29.48	29.77	29.58	W SW	S	S	Snow	Fair	Fair
2	-10	" 4	" 5	" 3.	30.05	29.99	29.61	29.85	N	W	S	Fair	Snow	Snow
3	-4	" 4	" 1	" 1.5	29.67	29.68	29.52	29.59	S W	W	S	Fair	Fair	O'rcs't
4	-4	" 5	" 4	" 1.	29.52	29.54	29.89	29.62	N	S W	S	Fair	Fair	Fair
5	-9	" 7	" 4	" 1.	29.93	29.81	29.85	29.86	S	S	S	Fair	Snow	O'rcs't
6	-3	" 8	" 1	" 2.5	29.95	29.90	29.86	29.90	N W	N W	N	Fair	Snow	Fair
7	-2	" 9	" 4	" 3.5	29.93	30.00	30.05	30.01	N W	N	N	Fair	Fair	Fair
8	" 5	" 9	" 3	" 7.	30.22	30.22	30.16	30.20	N W	SW bs	W S W	Foggy	Fair	O'rcs't
9	" 7	" 20	" 32	" 13.5	29.85	29.52	29.20	29.52	S	S	S W	Fair	Sleet	Rain
10	" 36	" 38	" 34	" 37.	29.25	29.29	29.29	29.28	S W	S W	S W	Fair	Clo'dy	Clo'dy
11	" 23	" 30	" 27	" 26.5	29.58	29.64	29.53	29.58	S W	S W	S W	Fair	Fair	Clo'dy
12	" 27	" 36	" 33	" 31.5	29.52	29.46	29.52	29.50	SW bs	SW bs	S W	Fair	Fair	O'rcs't
13	-33	-35	" 23	" 34.	29.60	29.68	29.75	29.68	S S W	S S W	S S W	Snow	O'rcs't	Fair
14	-25	" 33	" 32	" 29.	29.76	29.60	29.45	29.57	S	S	S	Clo'dy	Fair	Fair
15	" 34	" 36	" 32	" 35.	29.47	29.43	29.48	29.46	N	N	N	O'rcs't	Snow	O'rcs't
16	" 21	" 26	" 20	" 24.	29.66	29.70	29.46	29.61	N	N W	N W	Clo'dy	Rain	Snow
17	" 33	" 23	" 20	" 33.	29.33	29.54	29.50	29.56	S	S	S	Fair	O'rcs't	Rain
18	" 12	" 15	" 8	" 13.	29.96	30.02	30.20	30.06	S W	W	W	Fair	Fair	H w'd
19	-6	" 16	" 14	" 11.	30.35	30.44	30.22	30.34	W S W	S	W	Fair	Fair	H w'd
20	" 15	" 33	" 28	" 24.	29.77	29.62	29.76	29.72	S	S W	S W	Snow	Snow	Fair
21	" 10	" 20	" 13	" 15.	30.21	30.22	30.20	30.21	N W b N	N W b N	N W	Fair	Fair	Fair
22	" 7	" 23	" 11	" 10.	29.94	29.69	29.60	29.71	E N E	E N E	E N E	Snow	Snow	Snow
23	-11	" 13	" 12	" 23	29.85	29.90	30.01	29.92	S	S	S	Clo'dy	Fair	Fair
24	" 14	" 38	" 28	" 26.	29.80	29.57	29.86	29.74	S W	S W	S W	Fair	Clo'dy	H w'd
25	" 16	" 12	" 7	" 14.	30.14	30.00	29.78	29.97	S W	S S W	S S W	Clo'dy	Snow	O'rcs't
26	" 10	" 22	" 13	" 16.	29.73	29.81	29.92	29.82	N	N	N	Clo'dy	Snow	Fair
27	" 7	" 12	" 4	" -9.5	30.05	30.08	30.16	30.10	N W	N W	N W	Snow	Fair	Fair
28	-2	" 6	" 26	" 2.	30.13	29.70	29.26	29.70	N W	S S W	S S W	O'rcs't	Fair	Fair
29	" 32	" 5	" 8	" 19.	29.90	29.97	29.18	29.02	W	W	W	Fair	Snow	Snow
30	-20	" 14	" 12	" 17.	29.60	29.75	29.97	29.77	W	W	W	Rain	Snow	St day
31	-15	" 0	" 5	" -7.5	30.32	30.46	30.64	30.47	W	W	W	Fair	Fair	Fair

THERM. { Maximum, +33° on the 10th, at 3 P. M.
 { Minimum, +20° " 30th, at 7 A. M.
 Mean of the Month, +14.7°

BAROM. { Maximum, 30.64 in, on the 31st, at 10 P.M.
 { Minimum, 29.90 " " 29th, at 7 P.M.
 Mean of the Month, 29.77 inches.

