## 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.

- ☐ 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.

☑ Additional comments / Commentaires supplémentaires: Continuous pagination.

THE

# BRITISH AMERICAN JOURNAL

OF

# MEDICAL AND PHYSICAL SCIENCE.

VOL. ·] MONTREAL, AUGUST, 1845. [No. 5.

## OBSERVATIONS ON A CASE OF "POISONING BY TINCTURE OF OPIUM."

*To the Editor of the British American Journal.*

SIR,—The third number of your Journal contains a Case of Poisoning by the Tincture of Opium, by C. Sewell, M.D." With your permission I will make a few remarks on it.

There are three questions which may be asked:—1st, Is recovery after taking ten drachms of laudanum an extraordinary occurrence? 2nd, What degree of tolerance of opium was in reality shewn by Dr. Sewell's patient? 3rd, Was the treatment pursued such as is recommended by the best authorities?

With regard to large doses of opium, I believe that when remedial treatment has been timely applied, recovery has taken place in a majority of cases in which ten drachms of laudanum have been taken by adults. Two, three, and even four ounces of laudanum have been swallowed, without fatal effects, by persons not habituated to its use. Dr. Christison relates a successful case, in which eight ounces of crude opium were taken. Mr. Taschereau, M.P.P. took, by mistake, when in Kingston during the last parliament held here, nineteen and a half grains of the acetate of morphia, (equal to 39 times as much as Dr. Sewell's patient swallowed,) and recovered, although it was some time before the mistake was discovered, and remedial treatment had recourse to. To my mind, therefore, there is nothing extraordinary in recovery from ten drachms of laudanum.

With reference to the tolerance of opium displayed by Dr. Sewell's patient, let us judge by what the Dr. himself says:—"I was hastily summoned," says he, "to S—— J——, ætat 40, a cabinet-maker, who had inadvertently swallowed laudanum for tincture of rhubarb. He had taken it about five hours before my arrival. When seen by me he was in bed awake, and quite conscious. The pupils were contracted to the size of a pin's point, and immovable; the temporal arteries pulsated with great violence; speech was uttered with difficulty; skin dry; pulse 100, and jerking." That being "in bed *awake*, and *quite* conscious, coupled with some of the other symptoms is, I must admit, somewhat anomalous, as in general patients require to be roused to show their consciousness. Notwithstanding this anomaly, (which is not unprecedented in Mr. Semple's case, for instance, reported in 1841), there are a sufficient number of symptoms enumerated by Dr. Sewell, to prove that his patient was labouring strongly under the influence of the narcotic when first seen by him. As Dr. Sewell has not informed us how long a time the man had been under its influence before seen by him, we are in a great measure left in the dark as to the degree of tolerance exhibited by his patient. This perhaps unavoidable omission in the history of the case is much to be regretted, as we are thereby rendered unable to judge correctly of that part of the case which might otherwise have been interesting, namely, the protraction of the commencement of the symptoms beyond the usual time, probably half-an-hour or an hour from the time of swallowing the opium.

As proof of the tolerance of the opium, Dr. Sewell advances the fact, that "a large portion of the laudanum swallowed was thrown up, as easily ascertained, from the circumstance of his having taken only a little tea during the day." Reasoning on false premises, and jumping to rash conclusions should be avoided where medical facts are to be ascertained. Experience has shewn that persons may vomit what may appear the entire quantity of the laudanum taken, and yet have suffered from its toxicological effects. That a patient may take an opium pill on going to bed at night, and vomit it next morning, after its narcotic effects have been produced, is a fact resting on observations made as far back even as the time of Van Swieten. And the remark by Tortosa, that opium may act mortally with a very slight deficiency of weight, although questioned by high authority, has never been disproved. I maintain, therefore, that the circumstance of the "matter ejected being *coloured* with laudanum," is no proof that the laudanum had not acted.

Keeping in view, then, the varieties of idiosyncrasy which exist, and the circumstance that Dr. Sewell's patient had taken the laudanum instead of tincture of rhubarb, for the relief of a "peculiarly severe" colic; reflecting on the possibility of deception, with reference to the *quantity* and *quality* of the contents of the phial; and taking into account that no description is given of the state of the patient between the time he swallowed

the contents of the phial, and his being seen by Dr. Sewell, I can see no necessity for referring the tolerance of the poison to two of the supposed causes, namely, "irritation of the mucous membrane of the stomach," and "digestion of the opium having commenced."

That the tolerance of opium in *delirium cum tremore* had been explained by the fact (?) that digestion is more than ordinarily strong in that disease, had escaped my notice up to the time of Dr. Sewell's observation to that effect. I have no doubt, however, that Dr. Sewell has good authority for making the statement, and I will, therefore, have much pleasure in being further informed regarding it. An extract from the author who has advanced this fact will perchance enlighten many of your readers who are as ignorant as myself on this subject, and may point out an analogy, hitherto unknown to us, between the process of digestion in the human subject in this disease, and the ordinary process of digestion of certain of the herbivora.

Respecting the treatment of Dr. Sewell's patient I may ask, why were emetics given and continued to the exclusion of the use of the stomach pump? What symptoms were there after vomiting to contra-indicate stimulants? And whether if coffee, tea, ammonia, or stimulants of a like nature had been given instead of two ounces of vinegar every half hour, there would have been as high a degree of that increased speechlessness and augmented drowsiness, which Dr. Sewell reports as having existed under the vinegar plan of treatment.—"Vinegar," says Dr. Christison "is undoubtedly one of the best remedies that can be employed as an antidote, for the alkalies and alkaline carbonates, because it converts them into comparatively inactive salts. But in poisoning with metallic compounds, vegetable narcotics, and very many vegetable irritants, where it was once almost invariably used, it does harm for the most part instead of good, because it aids the solution of the active parts of the poisons." The United States Dispensatory, by Wood and Bache says, "vinegar has been supposed to be a powerful antidote to the narcotic poisons, but this is a mistake. In the case of opium the best authorities unite in considering it worse than useless, it rather gives activity to the poison than neutralizes it."

If, then, vinegar be repudiated as an antidote for opium, while the opium remains in the stomach, because it aids the solution of the active part of that poison, what is its *modus operandi* as an anti-narcotic after the opium has been rejected from the stomach? and, moreover, supposing it to be an anti-narcotic, are two-ounce doses of undiluted vinegar, as prescribed by Dr. Sewell, preferable to *weak* vinegar and water combined with coffee, as recommended by Orfila? Again, if it be admitted that vinegar will increase the action of opium, if it should meet with it in the stomach *or bowels*, is it not necessary that the opium be evacuated from the *primæ viæ* before the vinegar be prescribed? And was the circumstance that "the water swallowed come up clear," a certain indication of this in the case of Dr. Sewell's patient? Farther, will it not be better to discard vinegar altogether from practice, in poisoning with opium, if its remedial action be doubtful, and give place to therapeutical agents more powerful, and with whose physiological actions in narcotic poisoning we are better acquainted?

In asking this last question I am quite prepared for the answer that Orfila, Paris, Pereira, and others of the greatest celebrity, although, they denounce vinegar as an antidote to opium have nevertheless recommended it as an antinarcortic. I ask, however, if it is not the sheet anchor as an antidote in the British Hospitals? In reading the recent reported cases of the British Hospitals, of poisoning with opium, I do not recollect of seeing vinegar mentioned. Taylor, a late and extremely good authority, does not even notice it. What do the late editions of Orfila and Christison say with regard to it?

I am, Sir,

Your obedient servant,

JOHN S. STEWART,

*Licentiate of the Royal College of Surgeons, Edinburgh.*

KINGSTON, July, 1845.

## ON A SOURCE OF ERROR IN SUPPOSED INFANTICIDE.

SIR,—I beg to forward to you for publication in your Journal (if you deem fit) the following case, which occurred a few days since in my practice.

It is I conceive interesting in a medico-legal point of view, particularly when taken in connexion with the Coroners Inquest lately held at Isleworth, England, on the body of Ann Pendry's child; the particulars of which are reported and ably commented upon by Wm. Ryan Esq. M. R. C. S. E., in the *Lancet* for June 21st, 1845. I may merely here mention for the benefit of those who have not seen the report, that the above named Ann Pendry, was delivered of a child in a privy—that the child was shortly after found dead at the bottom of the privy, and that a verdict of wilful murder was returned by the Coroners jury against the unfortunate mother.*

*"On the 28th of February, Ann Pendry was known to be about ten minutes in the water-closet. From appearing in a weakly state on her return, and being seen to wipe her hands in her apron, the suspicions of Mr. Wapsholt were excited, (the girl having previously been suspected of being *enceinte*,) and he immediately went to the water-closet, and saw something dark lying in the

Case.—Mrs. B. ætat 30, married; and pregnant with her first child, was seized during the night of the 20th inst, with labour pains. Being a refugee from the late fire, she occupied part of a garret in which two or three other families, and some young men were sleeping. Feeling a natural delicacy, at being confined under such circumstances, she suppressed her cries till daylight, when she descended into a lower apartment, in which resided a woman who had been recently confined by me, to whom she detailed her feelings, requesting at the same time that some warm water might be given to her to "sit over," to relieve what she described as a great pressure at the lower part of the bowels. She had hardly seated herself upon the edge of a rather high chair, when a severe bearing pain seized her, and before any assistance could be afforded (though one or two women were in the room) the child was forcibly expelled, and fell head-foremost on the floor, being killed upon the spot.

I should have mentioned that I was sent for immediately after Mrs. B. had descended into the lower chamber, but did not arrive till about twenty minutes after the delivery. The child which was a remarkably fine one was perfectly dead, and still attached by the cord to the placenta, which came away shortly after the infant.

In the above case not the *slightest suspicion* of criminality can attach to the mother; but, suppose the delivery to have taken place under circumstances precisely similar to those in Pendrys case, though there would be ground for a medico-legal investigation, still, with the fact brought before them by the coroner, that cases such as I have now reported, do not unfrequently occur, a jury should be extremely cautious how they blast a poor creature's character, by returning such a verdict as that recorded against this unfortunate woman.

---

soil; on moving it with a stick he found it was the head of an infant. The girl, on a surgeon and her mother arriving, at once declared, that while sitting on the seat of the water-closet, the pains came on so suddenly that she was unable to get off."

"The surgeon deposed, that on visiting her she appeared to have lost a good deal of blood; that the internal organs of the infant were healthy; that air had entered the lungs, although not to their full extent; and that the child had been born alive; that under the scalp, over one of the parietal bones, was effused half a drachm of blood, and in the bone a fracture, (a fissure?) which might have been two or three inches in length; that there was no indentation, no depression, and that the brain and its membranes were uninjured; that there were no marks of violence except at the umbilical cord, which was broken an inch and a half from the belly. The surgeon could not depose as to the cause of death." * * * * * *

In the first place, it was the girl's fourth illegitimate child, and therefore, as she was "used to it," the deed could not be prompted by those feelings of shame which might actuate a more unblemished character. This must be particularly recollected as the first great incentive to infanticide."—*Lancet.*—Ed.

I am happy to have it in my power, by a recent case in point to support the view taken by Mr. Ryan.

I have the honour to remain, Sir, your obedient Servt,

James A. Sewell, M. D.

Quebec, July 26th 1845.

---

## OBSERVATIONS ON CHARBON (MALIGNANT PUSTULE.)

*To the Editor of the British American Journal.*

Sir,—The number of your Journal of the 16th June contains the report of a case of "Charbon," which was treated at the Montreal General Hospital. If the following case and remarks are worth a place in your Journal, my object will be achieved.

I am, Sir, your's, &c.

W. Marsden, M. D.

Nicolet, 23d June, 1845.

---

Marie Bourgeois, ætat 17, of St. Esprit, was brought to me on the morning of Sunday, June 26th, 1842, with swelling of the right arm, extending about half-way up, and swelling of the fore-arm and hand, accompanied with a good deal of heat and pain. On the palmar side of the wrist, about the junction of the carpal bones with the radius, was a very dark brownish black shining pustule, about the size of an English shilling. About half an inch above, and the same distance to the ulnar side of the wrist, and at the junction of the carpal and metacarpal bones of the index finger, on the dorsal side, were three other pustules, varying in size from five-eighths to three-eighths of an inch in diameter, with livid edges, and phlyctenous elevated centre, containing a yellowish transparent serum.

She stated that she had on the previous Sunday morning, before mass time, assisted in skinning a steer that had died suddenly during the night. That on the Tuesday evening following, she felt a species of *engourdissement* in the fore-arm and hand, but not pain. On the following morning, Wednesday, she felt slight pain, which continued increasing until evening, when it became referable to the axillary glands of the same side. On Thursday morning a small pimple, (or *bouton*, as she described it,) appeared, and successively until Friday three others, at which time the pain was most intense. Until Saturday about noon the pustules continued growing larger and darker, and the swelling to extend up the arm; but as the pain did not increase, and she had not the means to hire a conveyance, she delayed calling on me until Sunday morning, a neighbour having promised to bring her down on going to mass. I will as briefly as possible describe the plan of treatment I adopted. Having first removed her to a convenient lodging in the village, I pro-

ceeded to lay open the largest pustule by a crucial incision, and then divided the phlyctenæ of the others, allowing the serum to escape. I next, with a piece of lunar caustic, pencilled the edges of all the pustules freely. I then applied stimulating fermenting poultices, composed of coarse flour, yeast, and onions, from the middle of the fore-arm downwards, the onions so placed as to be in proximity with the pustules, and to be repeated every second hour; and cooling evaporating lotions from the part last mentioned upwards to the shoulder. I continued this plan of treatment from the 26th to the 29th, when I ordered the onions to be omitted, continuing the yeast and flour only, as the sores were already beginning to slough; and finding that the appetite had slightly failed, with sinking pulse, I ordered port wine. I continued the fermenting poultices until the 2d July, when sloughing was complete, and the sores looking healthy. From this time until the 17th I used an ointment, composed of cerat. cetacei ℥i, with kreosote, gtt. ij., when the sores were completely healed.

During the whole course of this case there was less general derangement than I have seen in others, it having fallen to my lot since I have been here, to witness five cases of this dangerous and distressing disease, four of which came under my own care. I followed the same plan of local treatment, as above described, varying the general one, according to circumstances of habit, constitution, idiosyncrasy, &c.

My reasons for opening the pustules as soon as they appear, in lieu of allowing them to break spontaneously are, that we diminish the symptomatic fever, by preventing the absorption of the virus, on the same principle that it has been recommended to open the pustules of small pox as they ripen, and by applying caustic, we hasten sloughing, and the poultices, by their stimulant and antiseptic qualities, excite the local action of the morbid parts, and diminish the chances of a systemic tendency. Of the four cases I have treated according to this plan, the erysipelas was immediately arrested. Whether my hypothesis be correct or not, remains to be seen. From the result of my own observations and research, I have arrived at the following conclusions respecting "CHARBON":—

1st. That it is a disease *sui generis*.

2nd. That it is the effect of a specific virus.

3rd. That it can only be obtained from the dead body.*

4th. That it may be introduced into the system without any breach of surface.

5th. That some idiosyncrasies are not susceptible of its influence.

6th. That no prophylactic can guard against it.

7th. That it has no fixed period of incubation or termination.

## ON THE CHEMICAL COMPOSITION OF THE WATERS OF THE ST. LAWRENCE AND OTTAWA.

BY E. S. DEROTTERMUND.

*Chemist to the Provincial Geological Survey.*

The waters of the river St. Lawrence, which flow past Montreal are of two kinds,—the one coasting along the left side of the river, appertains to the Ottawa, the other flowing opposite the city, comes from the upper lakes. These run together for several leagues without intermingling, a fact demonstrable from the preservation of their respective colours. The St. Lawrence water posses-es a fine blue colour, that of the Ottawa appoaches to a brown. Both kinds are very pure, differing from distilled water only by .002 or .003, for by taking the specific gravity of distilled water as unity, the specific gravity of the St. Lawrence water is 1.0036; that of the Ottawa water 1.0024, their temperature being 66° Fah., while that of the air was 82°. Taking into consideration the specific gravity of the two waters, we can understand why they do not easily intermingle; this arises not only from a difference in the amount of saline matter dissolved, but also from a difference in its nature; both contain chlorides, sulphates and carbonates, with bases of ime and magnesia, but the St. Lawrence water moreover holds in solution carbonate of lime, and in consequence is not so well adapted for culinary purposes, as this salt deposits itself readily when fluids containing it are heated, and their bulk diminished by evaporation.

The brown colour which the Ottawa water possesses, might be attributed to the presence of a very minute quantity of Marle or Loam, held in suspension; but the amount of it must be exceedingly minute, for when specimens of the two waters, the St. Lawrence and Ottawa are put into tumblers, no difference in colour is perceptible between them. It is rather to be supposed that the colour of the Ottawa water is not due to colouring principles, but the two waters being impregnated differently with saline matter,—the rays of light are reflected differently, an effect which is more striking when the

* Now, although Gibson "attributed the cause of his disease to have originated in the introduction of his arm into the rectum of a bull labouring under dysentery," *non sequitur* that such was the cause, *as he afterwards assisted in skinning the animal.* I am not aware that charbon ever occurred from "raking" an animal, (as it is vulgarly termed,) even where the death of the animal has followed. It is the custom of butchers and others, in skinning dead animals, after having removed a portion of the hide, to use the bare elbow to tear away the remainder from the cellular membrane. In the case of Gibson, the first pustule was observed "about three inches below the bend of the elbow, on the anterior part of the fore-arm. On enquiry I doubt not it will appear that he had used the *modus operandi* I have just described, and that the part where the first pustule appeared, was the one most exposed to the action of the virus.

two waters are in contact, and in great quantities. Seeing that the two waters contain the same salts in solution, the difference in their Specific Gravities, also demonstrates a difference in their states of impregnation.

The following are the results which I have obtained from specimens of the waters above mentioned, which I took at the beginning of July, of the present year, from the river opposite the city. They both contain equal quantities of atmospheric air in solution, to the amount of 4·6 per cent. From a litre (57 cubic inches, about a quart) which I evaporated to dryness, I obtained so small a quantity of residue from the Ottawa water, that I found it difficult to weigh it with perfect precision, but I estimated it at 1.5 grains; while I obtained from the same quantity of the St. Lawrence 2.87 grains of solid residue. The quantitative analysis from 57. C. I., of each gave as follows:

| | Ottawa water. | St. Lawrence water. |
|---|---|---|
| Sulphate Magnesia, | 0,62grs. | 0.69 |
| Chloride of Calcium | 0·38 | 0.60 |
| Carbonate of Magnesia | 0.27 | 1.07 |
| Carbonate of Lime | . . | 0.017 |
| Silica . . . | 0.31 | 0.50 |
| | 1.58. | 2.877 |

MONTREAL, *July 29th* 1845.

## REMARKS ON THE REV. MR. LEACH'S OBSERVATIONS ON THE PREVIOUS EXISTENCE OF A FRESH WATER INLAND SEA.

BY JOHN RAE ESQ., HAMILTON, C. W.

(*Continued from page* 92.)

1st. Magnesia over abounds in their composition, and gives to their structure a shivery and crumbling aspect. This character you will recollect, is distinctive of all the range, from its original massive bulk in South America, down through the whole branch, it shoots through the Atlantic States and Canada. We are now examining the very extremity of that branch, and may admire, but not wonder, at its preserving the characteristics of the parent stem. 2nd. The strata are of extreme tenuity; where you might anticipate a thickness of yards, aye hundreds of yards, you find only feet or even inches.* It seems as if nature had run out this gigantic range to the utmost extent her materials would admit of. 3rd. This tenuity of stratification, placing us at almost every footstep on a separate line of rock, renders the bearing and dip of the series very conspicuous. The former shows itself with singular regularity, holding a course very nearly due north-east, so as if carried on to strike near Quebec. The latter is at an angle of 45°, and at the point we are, is to the south-west. 4th. Every little brook, streamlet, and river, which each cloud-capp'd summit of their ridges generates, is evidently, day by day, rapidly eating up the body of its parent. To drop metaphor: from the structure of the rocks—from the disintegrating effects of the climate—from the mighty thaws of Spring, and the sudden floods of summer, the agency of water in hollowing out, and bearing off, is very great and conspicuous. You cannot look at the smallest rill without seeing that it is now busily at work, or without noting the great amount of work it has already accomplished. The whole mountain chain is every where cut through and gutted. 5th. You observe that the back bone and stay of the series, is the rock termed greywacke, sometimes pure, sometimes mingling with the structure of the other rocks.

Having made these observations, let us follow those mountains, or rather their south-western skirts, till we come to Quebec. As we proceed you note the increasing predominance of the greywacke; at last, a league or two from the city, it becomes the sole rock, rising out from the debris of less resisting materials, or from the mass of slaty clay which we already noted. By-and-by you partially lose it. It only appears in detached masses, rising in knolly hills over the plain, which have, however, a general bearing to the north-east, similar to that of the original chain. We have passed several of them. There is one before us worth our while to ascend. Thirty feet takes us to the top. But look down! Three hundred feet below you rolls the mighty St. Lawrence. Three quarters of a mile opposite, and rather above us, rises Cape Diamond and the City of Quebec—I should say what is called the upper town of the ancient capital; —the lower town, with its accompaniments of shipping, rafts, and boats, fringes the opponent shore, on which from our eminence we look down. The surprise over, the view admired, I ask you how do you think this huge channel was formed? When there is a gap in strata, we know that that gap must have been produced by something; what has been that something—that agent? Cast your eyes, I beg of you, on the mighty stream, which, in eddying whirls, rolls far beneath our feet. Is not this a cause, a sufficient cause, for its existence? We have just been contemplating the workings of running water, and seeing it cutting out channels of all degrees and varieties—why should not this channel have also been cut out by it? It is vast, but certainly it is not more vast than the stream is powerful. Let us not, how

* A remarkable instance of this tenuity of strata occurs a hundred miles to the South West of this, about four miles to the West of Stanstead. There a regular stratum of granite, of little more than a yard in thickness, comes distinctly into view; the very same stratum, I think is crossed at Montpellier in Vermont, where it has thirty times the thickness. In both localities the stone is much used for building, and it must therefore at both be well known. This circumstance leads me to instance it, and also, that granite distinctly stratified, and conformable with other rocks, is a very singular phenomenon.

ver, be rash in our conclusions. Let us examine the evidences, and see if they bear out this *prima facie* view of the case. For this purpose let us cross the tide, and see of what the other shore consists. It is the very same greywacke, intermingled with limestone and slate, that has all along been meeting us, and it rises out of the same slaty clay with which we are now familiar. The rocks are evidently the same on the one side as on the other, and you may trace the greywacke on till it joins the granite of the northern chain. One locality, the Falls of Montmorenci, where this union is easily seen, deserves to be noted. The rush of that great waterfall has bared a small peak of the underlying granite, and you see it, consequently, rising right out of the superjacent wacke. It is clear, then, that what is now the channel of the St. Lawrence, was once filled up by a mass of rocks, consisting chiefly of greywacke and slaty clay. How has that mass been cleared out? Surely we need to seek no other agent than the wearing powers of that great stream, which we see every day deepening and widening its bed. But if the channel be the work of the river, it must, you say, have been a gradual work, and there should be traces of this gradual progress. There are such traces. Go to any elevated point on the north-west side of the city, and contemplate the valley which lies between you and the northern granite chain.

Note its smooth and equal slope downward below you—its smooth and equal rise beyond: mark its connection above at Cap Rouge, with the present channel of the St. Lawrence—its connection below by the suburb St. Roch with the same channel. Tax all your antecedent experience, and tell me is not this in reality a river scooped valley? Say must not great waters have flowed through it in ancient times? Evidently there was a time when had we two been standing on this, the site of what is called the high town of Quebec, we should have seen a great stream passing to the northward of us, in addition to the great stream which now passes to the southward of us. Where we stand had been an island washed all round by the St. Lawrence, though smaller, yet similar to what the Isle of Orleans now is. At this period the bed of the now-existing south channel could not have been greatly deeper than this ancient northern channel. It must then have been more than a hundred feet higher than it now is. Hence, therefore, is one evidence of the gradual lowering of the great stream at this point of its passage. I shall only call your attention to one other. But previously to doing so, it is necessary for the distinct comprehension of the nature of the proof exhibited, that we consider some ascertained facts concerning the mode in which a current of water works among rocks, and the traces it consequently leaves of its workings.

Every large rocky mass has different degrees of tenacity. When, therefore, a stream of water has to work its way through such a mass, it has a tendency to form islands. Wherever a portion of the rocks, possessing greater hardness and density than the adjoining parts, presents a firmer front to the stream, the action of the water is diverted from the point, and turned to wearing out channels on each side of it. Hence arises an island of an oval form. The force of the stream, warded off from the upper end, being expended on the sides, and leaving the lower end nearly in tranquillity, and consequently extending somewhat largely down the stream.

Again, water in moving by such an island, impresses on it very distinct marks of its action. We know that the velocity of a stream is always much the greatest at its surface. It is on the surface also that ice and other matters are floated along. There is, consequently, an intensity of action at this level, which impresses on the rock a horizontal indentation or groove. The thing is to be witnessed in Norway, and in that strange miniature alpine tract of granite and limestone, which lies between Perth and Kingston. I am cognisant of the fact, as I know both regions by personal observation.

Having thus formed a distinct perception of general principles, let us go to the farm about two miles north of Cap Rouge, on which twelve years since the late Andrew Stuart had his summer residence; and some hundred yards to the south of the road, we find one or two rocky knolls rising from the surface. Let us examine them. Here are the traces which the living waters impressed on them in long antecedent ages. You see their oval form—you see those deeply graved indentations, the workings of a current gradually subsiding. Time, the old destroyer, rejoicing in the power in these regions of his great workers—summer, with her sun and rain—winter, with his frost and ice,—has, no doubt, succeeded in somewhat crumbling away the original smoothness of their water-worn surface;—in making here a dint, and there a gap, in the horizontal grooves, and intervening protuberances, and in burying their bases in confusion; but enough remains to satisfy you that the great stream of the St. Lawrence once swept them. When it did so its surface was two hundred feet above its present level.

Having brought you, my dear Sir, to this scene, the evidence of the ancient elevation of the waters, I find I must here leave you; for, counting the pages of my manuscript, I see we have already exceeded the limits I had assigned to our journey. I take my leave unwillingly, and, with many rock recorded facts on all sides of us, which I should be glad to point out to you, yet probably we have aimed at enough to warrant the conclusion at which I arrived, and further continuance might be tedious.

It is a rule in philosophy that when we are in search of the cause of certain effects, and are fortunate enough to discover a really working and sufficient cause, we ought to rest contented with it. Now, here we certainly have one. If any one doubts it, I would request him to station himself on Point Levi some day in spring, or, if the expression be objected to as anti-Canadian, some day in the days of thaw, which usher in our summer, when the ebbing tide is hurrying out, and masses of ice are tumbling round in the bosom of the stream; and mark as any great mass is plunged by the whirl from the surface to the bottom of the current, and again emerging, rears itself over the waters, how it shows the work it has been at below, by exposing to our glance its sheeny surface, shivered by the downward plunge, darkened by fragments of the opposing rocks, whose frame work in its dive down it was digging into. It is quite impossible for any one to look at the St. Lawrence at Quebec, and below Quebec, and not to see that it is now actually, year by year, moulding its channel into new forms. The difficulty we have in conceiving the whole chasm to have been formed by the stream, is that the amount of work done by it each year is so small, in comparison of the whole mass wrought out. We cannot easily bring ourselves to conceive, that so vast an operation has been performed by an agent, whose doings year by year are so minute. We must, however, recollect two things.—1st. That time is the most potent of the forces with which geologists have to deal. The greater proportion of the rocks which we see, are acknowledged to have been formed and moulded by exceedingly minute operations, if the extent of these operations is measured by years. It is the vast, the illimitable succession of years, during which they are continually carried on, that does the mass of great geological works, forms groups of rocks, heaves them out of their bed, and shapes them into the mountain masses we see. 2nd. When the waters to the south-west of Quebec were in the earlier stages of their progress of working out a passage, they had a far more rapid descent than at present, and, consequently, much greater force.

If, then, as is undeniable, according to all legitimate evidence, the waters now flowing along what we call the St. Lawrence, were, at no very ancient date, geologically speaking, dammed up about this point, then is it evident that all above the restraining dam must have been flooded, and what is now nearly a plain surface, been then the bottom of a wide extending lake of fresh water. The depth and extent of it would necessarily depend on the height of the barrier. There is sufficient evidence that just at Quebec this was about three hundred feet. This elevation would flood all the country from Quebec to Hamilton, and make a lake of double the length, and nearly of the breadth of Lake Superior. It is the shores of this ancient and gradually subsiding Lake, that constitute the most distinctly marked of those marginal lines referred to by Mr. Leach, as unquestionably indicating the action of water. The mountain of Montreal, with its *cotes*, may be cited as a good example of these. At the time referred to, it must have been all submerged, with the exception of its two rounded summits. The terraces with which it is skirted, give us the successive lowerings of the level of the Lake.

Thus far all is to my apprehension very clear and apparent, and resting on the evidence of facts which any one can ascertain, and having done so, will admit to be conclusive. But Mr. Leach advances to other grounds, and complicates the examination of the subject, by bringing into consideration the revolutions that have occurred, or may have occurred, in the rocky strata themselves, which compose this our Province of Canada. What, then, are these strata? And what, from the science of geology, and the phenomena they exhibit, can we ascertain or conjecture concerning the revolutions they may have undergone? As to the strata themselves, they begin with granite, and rise as high as the lower strata of the mountain limestone. There is no rocky series of more modern date than this in Canada. Every geologist knows that these strata are very ancient. If he is to fix a date for their formation, he reckons it by millions or billions of years. If he is to give a guess at the revolutions to which they may have been subjected, he would say, judging from what we know has taken place at other points of the surface of our planet, that they have been submerged at least a dozen times beneath the level of the ocean, and as many times upreared. Their present appearance is familiar to us all. To the unassisted eye, unless of the very nicest, they seem perfectly horizontal, but they in reality have a dip southward of something under thirty feet in a mile. I am perfectly at a loss to understand what Mr. Leach means by asserting that these strata, along the banks of the Canadian Lakes, exhibit innumerable instances of disruption from a sinking down of the surface in one quarter, and its elevation in another. I should, on the contrary, say that the most remarkable fact with regard to the whole region, is the absence of any of those breaks in the continuity of strata, which in other continents ever and anon meet us. I have examined these margins from Kingston to Amherstburgh, Sandwich, and Penetanguishine, and at various points of the southern shores, and I must confess I have looked in vain everywhere for a single instance of disruption of strata, produced by elevation or depression. It can scarce be but that some instance of such disruption is somewhere to be found, but I have not seen one, nor,

after all my enquiries, have I learned anything of one. Mr. Leach will, therefore, confer a favour on me, and I am persuaded on other inquirers into these matters, by pointing out the localities of the disruptions he talks of. One thing is very clear: the beds of Lakes Ontario and Erie, the most immediately interesting to Canadians, have not been produced by any such disruptions of strata, but are hollowed out of strata, equivalent, the one to the old red sand stone, and the other to the anagenite red sand stone of Brongniart, the best authority I can just now lay my hands on.*

What then can be said of the changes these strata may have witnessed since their final deposition? Surely very little that is certain or satisfactory. Many questions may indeed be put concerning them, but they are questions that have not, so far as I am aware, been solved and which I apprehend admit not of easy solution. What, for instance, was the extent of strata once incumbent over them? Each dozen miles or so that we travel southward of Lake Erie takes us to the out-crops of more recent strata. Did these once extend over Canadian regions? If so, how were they removed? Again we have a deposit of blue clay,—what produced it? That blue clay has been washed off at various points, and our granite rocks also have marks of a northern flood. How was that produced, and when? Yellow clay overlies the blue clay, and it also seems flood-washed. How is this?

I shall not attempt any answer to these, or to any other possible enquiries. Were they solved, they would leave the fact of the gradual issuing forth of the waters of the great lake or lakes, and the successive formation of new shores, exactly where it was. Our Canadian strata were formed at a period a hundred times more remote from the origin of the lakes, than is the era of the French revolution. There seems to me a scientific incongruity in mingling together eras so very distant.

But to deal immediately with Mr. Leach's hypothesis, that there has been a gradual elevation of the continent. In so far as geological theories go, it is certainly a very probable one. All existing continents are supposed to have been so elevated. Yet, if we adopt this hypothesis, provided I have given a correct statement of the actual geological facts, which an examination of Canada presents, it would by no means alter received opinions. Granting that the land has been upheaved, it is very certain that during these upheavings, its present rocky strata suffered but little alteration. Were I to image forth the process, first would appear out of the waste of waters, the summits and the sides of the three mountain chains I have described in the beginning of this paper, they would have enclosed a vast salt water lake. But the waters of this lake, elevated more or less over the general level of the ocean, would seek an exit. They would find an exit at some gap in the brim of the containing mountain ridges. Through this gap, or through these gaps, if there were more of them than one, the interior waters would be continually sending one great stream, or several such streams. Observe now, that continually discharging, they would discharge salt water, and also, that being continually recipient, and receiving only fresh water, either river water, or rain water, the salt water would gradually be washed out,—the salt water lake would be converted into one of fresh water.* If we conceive successive elevations, following at long intervals, these might undoubtedly be connected with the farther depression of the waters, and formation of new shores. Though it is evident that there has been no great displacement of strata, still I think it probable that, at each fresh elevation, there might have been some such irregular heave, as to have shattered, at some point or points, the containing mountain brim, and to have given a beginning to fresh exits for the inland waters. This supposition would give a plausible explanation of the change they have made of the points at which they discharge themselves.

Let me, however, observe, that this, the hypothesis which in so far as I know Mr. Leach has been the first publicly to broach, connecting the formation of ancient lake shores with extensive elevation of the continent, might be tested by an examination of the shores of the valleys opening into the Gulf of the St. Lawrence. If the continent rose gradually, it is scarce to be doubted that traces of this gradual elevation will be found in these regions in more points than one, in the shape of well defined beaches. It is, indeed, well known that such exist. The accurate measurement of the eleva-

* This may be seen in the very excellent geological section of the Province, executed by the late Mr. Roy, and which some years since was in the office of the Surveyor-General, where, I presume, it still remains.

* The nature of the fish we have in the upper lakes, comes in, I may observe, as an auxiliary to the settlement of any question of this sort. If it be the fact, as is I think most likely, that there was an original great inland salt lake changed into fresh water by degrees, then we may suppose the inhabitants of the waters to have been gradually brought to endure the change, by corresponding changes in their constitution and habits. I am not sufficient naturalist to say any thing decided on the subject; only looking at the salmon trout of Lake Huron, and the herring and white fish of the other lakes, such a change seems indicated. It is wonderful how one department of natural history may help another. Suppose, for instance, it were decided as altogether probable, that the trout of Lake Huron were the result of such a revolution on the waters, then would it be a curious question how these trout exist on Lake Ontario. Salmon we know visit it from the ocean. To convert, therefore, the salt to the fresh water fish, there must have at one time been an obstruction in the channel, not now existing. Therefore there must have been a cataract about Quebec.—Q. E. D.

tions of these, compared with an equally accurate measurement of the more recent of the ancient shores of the interior lake, could scarcely fail to give us facts, very interesting, and probably very conclusive, with regard to this whole argument.

Now, these localities must all be within the reach of some of the readers of your Journal, and these may be induced to ascertain by actual measurement their exact elevation. I would venture to suggest the mountain of Montreal, that of Yamaska, probably the adjoining mounts, and the township of Shefford, as affording very distinct terraces of the sort. For lower levels the banks of the St. Lawrence itself, from Point aux Tremble to Three Rivers. Below Quebec, near Cape Mailliard, at the head of the settlement of La Petite Riviere, about, I should think, five hundred feet in height, there is a very distinct terrace, either an ancient beach or a lake shore. There are also at Malbay, both on the river valley, and by the road passing about a mile in the rear of Cape Blanc, distinct traces of the same sort. But it is below this that such observations would be most desirable. The existence of such beaches is stated, and, unless I mistake, the localities of some of them given, in the first and second volumes of the transactions of the Quebec Historical Society. Each fact of this sort, ascertained accurately, by careful observation and measurement, is important. A series of them would give us authentic data for our reasonings.

To conclude, I hold that the fact of there having been a vast fresh water lake occupying the interior of this continent, discharging its waters by various passages into the Atlantic, and gradually receding, and leaving marks of its recession, is unquestionable. The cause of the original formation of this lake, and of its successive recessions, is another question. We have as yet only probable, not certain, grounds on which to determine it.

Hamilton, 27th June, 1845.

---

*Message from His Excellency the Governor General, with Reports on a Geological Survey of the Province of Canada, presented to the House on the 27th Jan.*, 1845. By W. E. Logan, Esq. Provincial Geologist.

We propose to furnish the readers of the *British American Journal*, by the publication of copious extracts from these Reports, with some account of the labours of the Provincial Geologist and his assistant, and of the progress they have made in their vast field of observation. It is but seldom that the cultivators of the arts and sciences have the enjoyment of seeing a work of this description undertaken and favoured by the Legislature here, and at the same time prosecuted with zeal and talents proportioned to its importance and magnitude. The encouragement which the Legislature has bestowed upon this work, is deserving of all praise; and apart from the immediate interest and advantage which the Colony unquestionably has in the accomplishment of it, it evinces a just appreciation of the spirit which now characterises all enlightened communities, adding its contribution to the grand stock of information, in a department where the enterprise of individuals requires to be facilitated and sustained by every public means, in order to secure a successful prosecution of such works. There is no doubt but that these Reports will be received with great interest in Great Britain and other countries, conveying, as they will be confidently believed to do, accurate views and details of the physical history of a very extensive, and hitherto little known portion of North America.

So much, even upon the principle of honour, every country is bound to undertake and carry out; but it happens that its own interest is always concerned in the result. Its own resources are disclosed, and consequently its wealth and general prosperity are directly promoted; and though it should be found that these resources do not consist in a prodigality of the precious metals, and that there is no hope that—

> "Here the molten silver
> Runs out like cream on cakes of gold;
> "And rubies
> Do grow like strawberries."

Yet the very "saving" which authentic information upon the subject must occasion, by preventing fruitless searches and idle speculations, more than justifies the expenditure of a Provincial Survey, were that expenditure ten times greater than what the Government have undertaken to provide for. There are few States of the Union, probably none, in which many thousands of pounds have not been sacrificed in speculations for minerals, which a geological report, constructed upon accurate observation of the district, might not have prevented. The disappointment and ruinous consequences of these speculations, render it matter of prudence to guard against them in Canada, where few will be found hardy enough to adventure in them, when authentic information on the subject shall have previously demonstrated the impossibility of success. If the revenues of the Province, and of individuals, are hereby saved from the misapplications, which the history of other parts of America shews to have been not unfrequent, the Report of the Provincial Geologist, when he shall have brought his observations to a close, we regard as an invaluable safeguard of the public wealth, and of private prosperity. In point of fact, however, the mineral resources of the country are such as cannot fail amply to repay the labour of investigation. Many valuable materials might long remain un-

known, but for the divining rod of the geologist; and these at innumerable points, scattered over a large extent of country, will amount in the aggregate to a large increase of the wealth of the Colony. The Provincial Geologist, as we shall see, carefully indicates these in the course of his observations, and has shown, indeed, throughout the whole of his labours, a desire to render them available to the public good, and to point out every valuable property in the objects that fall under his inspection, with a view to their application to the useful arts.

The immense field of observation is thus described summarily at the commencement of the Report :—

"And when attention is given to the wide expanse of surface to be examined, which, stretching from the North Western shore of Lake Superior to the mouth of the Great River that unwaters the whole area, spreads across twenty-five degrees of longitude and ten of latitude, and comprises in the mere narrow strip partially settled along the River and its Lakes upwards of 60,000 square miles, the advantage and absolute necessity of a judicious and systematic plan of operations, so as to attain a satisfactory result in a reasonable time, are too obvious to be insisted on."

* * * * * * * * * * * *

"Confining attention to those regions which more immediately serve to illustrate the probable structure of Canada, it appears that a nucleus of coal measures coming from the south west is greatly spread out in Ohio and Pennsylvania. That portion of deposit which belongs to Pensylvania alone extends in an unbroken body from the south west corner of the State, a distance of 200 miles in a north east direction, while it occupies a breadth of 120 miles, from within twelve leagues of Lake Erie to the Apalachian range of mountains. Its line of contour exhibits on the North East a number of salient portions, pointing like fingers in that direction, and separated from one another by the effect of a series of parallel anticlinal axes, along which have been worn deep valleys in the various soft deposits below.* These salient portions in the carboniferous outcrop are therefore minor coal troughs subordinate to the great one, and though as parts of the great unbroken body of the deposit they reach no further than the road between Buffalo and Philadelphia, there continues from the extremity of each a series of outlying patches resting on the sinclinal mountain tops, which in some cases run quite across the State and enter that of New York. The most eastern out-lier is the anthracite coal region of Wyoming, the position of which is within 20 miles of the Delaware river, where it forms the dividing line of the two States mentioned, at the north-eastern angle of Pennsylvania."

"From beneath this enormous coal-field, with all its outlying patches, there crops out in succession a variety of conformable deposits, which on the surface roughly follow the contour of their carboniferous central nucleus, in parallel belts of unequal breadth, and accommodate themselves to all the sinuosities occasioned by geological or geographical undulations."

"The zones of course take a wider and a wider sweep as the deposits descend in the series, and the range of those at the base shew that the accumulated thickness of the whole must be very considerable, however flat the trough may be. As measured on the south side of the trough, this thickness has been ascertained to amount to 30,000 feet, and though it is possible several members of the series may thin down towards the north, it cannot fail to be of great amount on that side also."

"The lowest of these conformable deposits consists of silicious and calciferous sandstones of variable quality, which give support to a thick and conspicuous formation of blue limestone and associated shale, well marked by its organic remains. In its southern developement, this limestone has been traced across the state of Pennsylvania into that of New York, where gaining the Hudson River, it passes on to Lake Champlain and thence runs into Canada."

"Having, when in this country upwards of a year past, made a collection of the fossils of this formation and subsequently submitted them to the inspection of British Geologists, they have examined them with much interest, and pronounced them with some degree of cautious hesitation to belong to the lower silurian rocks of Murchison. The collection is, at present, in the possession of Mr. John Phillips of York, Palæontologist to the Ordinance Geological Survey of Great Britain, who is at this time engaged in making an extensive review of the fossils of the silurian epoch generally, and the favourable opportunity thus occurring for accurate comparison, will, it is hoped, enable him to pronounce a decided opinion on the question. But whatever be the precise equivalent of this rock in Britain, it is strongly marked by its organic remains in this country, and the formation is of a very persistant character. The surface over which it spreads in Canada is very great. Commencing at Lake Champlain, its southern margin keeps considerably to the south of the St. Lawrence. Of the distance between its outcrop and the river, however, I am, as yet, doubtful, not having, either from personal inspection or the information of others, ascertained it lower down than Yamaska, where I understand a stratified limestone answering its character is quarried for building and burning. This is about twenty-five miles from the bank of the St. Lawrence, and whatever be the distance further on, the base of formation ultimately reaches the vicinity of Cape Tourment below Quebec."

"Turning at this point and following its northern outcrop up the St. Lawrence, it is found to run along the foot of a range of syenitic hills of a genisoid order, which preserve a very even and direct south-western course on the north-western bank, and over the face of which various tributaries of the great river are successively precipitated in rapids and cascades, that, at once cutting deep into a thick and wide spreading deposit of an argillaceous character, (supposed from the remains of marine shells with which it is associated, to be of the most recent tertiary age,) in many places, expose the solid stratified rocks buried beneath. On the Maskinongé, the syenitic range is about twelve miles from the St. Lawrence; on the Achigan about twenty; and it strikes the Rivière du Nord about half a mile to the south of the village of St. Jerome. Following this stream down, the primary rocks, which are close on its northern bank, gradually assume a course with less of southing in it until they reach Lachute Mills, where their direction becomes nearly due west."

"Along this line from Cape Tourment to Lachute, the outcrop of the limestone does not in all cases come quite close to the primary rocks. There is occasionally a space left between them for the calciferous sandstone on which it rests; and along Rivière du Nord this rock, capped by the limestone, is seen in several places in a well defined escarpment about half a mile from the syenitic range, dipping southward at an angle of six degrees, which is probably one or two more than the average dip along the whole line of strike from the neighbourhood of Quebec."

"The distance from Lachute to the exit of Lake Champlain in a straight south-east line across the upper end of the Island of Montreal is about fifty miles; and from what has been said, it would appear that the limestone under examination, from this line to the north east constitutes a shallow trough, which in the neighbourhood of Montreal is of the breadth specified, and which gradually tapering to a point, terminates at Cape Tourment, a distance of 180 miles down the St. Lawrence, which flows through the middle of it the whole way. Whether any superior rock rests upon this formation in the district described, I am not prepared to say; but from the abundant presence of limestone in the Island of Montreal, which occupies the very centre of the basin, if any does exist (and the position of a conglomerate on the Island of St. Helens renders it not unlikely) it will probably be of small extent."

"Following the limestone formation to the westward, the basin which has been mentioned, after passing the line up to which it has been brought, splits into two parts against an extensive tract of primary country in the state of New York, rising up between Lake Champlain and the lower end of Lake Ontario, passing into Canada at the Thousand Islands. Of these divisions, one arm comprehends the calciferous rock already spoken of as existing along Lake Champlain, and the other constitutes a trough, a few miles within the southern rim of which runs the St. Lawrence from the Thousand Islands to Lake St. Francis; while its northern outcrop bordering on the Ottawa, rests upon a continuation of the syenitic range of rocks described, which, proceeding from Lachute, first touch this river at Grenville, and keep on its northern bank the whole way to the Township of Hull, with the exception of one point in the Township of Alfred, where the river making an elbow to the north, has the primary rocks on both sides. Pursuing the

* See Professor H. D. Rogers' state reports on the Geology of Pennsylvania.

Ottawa, against the stream, the river makes a considerable bend to the southward above the point where it thunders down the Chaudières at Bytown (a cataract inferior in importance only to Nisgara,) and thus in Hull the limestone has a breadth of about five miles on the north of the river. But how much farther up the stream the formation extends I have not yet ascertained, though, I believe, it is known to reach the neighbourhood of the Lac des Chats. From the Rapides des Chats to Brockville, the distance in a straight line is about seventy miles, and about ten to the westward of this line, the basset edge of the western extremity of the trough under description, gently rises up to rest upon the eastern side of a great promontory of syenitic country coming from the North to connect the vast primary regions of Canada, by the very narrow isthmus of the Thousand Islands, with those which spread out like a huge peninsula in New York."

"Between these primary rocks and the southern outcrop of the limestone, the calciferous sandstone assuming a very silicious character, is largely developed; but on the northern side of the trough I did not any where detect it coming to the surface, though the limestone was in no place seen to approach the primary rocks so near as to determine its absence, and the lowest calcareous beds always possessed so much of an arenaceous mixture as to deteriorate the quality of the stone for the purpose of making lime. On the western side of the trough the sandstone with the limestone resting on it, is visible, among other places, at the Upper Narrows on Rideau Lake, dipping a little to the north of east at an angle of four degrees."

"On the western side of the syenitic promontory which has been mentioned, the sandstone appears to thin down and die away altogether, and the limestone, which after passing round from the Hudson River by the valley of the Mohawk River and Trenton Falls comes into Canada by Howe and Wolfe Islands, is seen at Cedar Island, in the vicinity of Kingston, to rest immediately on the syenite,"

"Continuing to trace this formation westward, its northern boundary from the lower extremity of Howe Island has a strike to the W. N. W., which carries it to the iron works in the Townships of Madoc and Marmora, where, cut out into promontories, peninsulas, and outlying islands, it is embossed on the primary rocks below, and resting on which unconformably at so small an angle that, without much difficulty, it is impracticable to estimate what the average dip may be, it horizontally fills up the undulations and cavities in their surface. On closer examination it will probably be found that a similar fringe garnishes the outcrop of the deposit the whole way from the Thousand Islands, not only in the direction of Marmora, but also in that of Lac des Chats. The top of the formation is said to strike into Canada at Newcastle, on Lake Ontario, and if such be the case, its breadth to Marmora may be taken at above thirty miles."

"My information as to the developement of this calcareous band farther west is not very precise, but in its progress in that direction it is known to come upon the shores of Lake Simcoe, and to strike those of Lake Huron in Nottawasaga Bay. From this, taking a more northerly course, it constitutes the south-west boundary of Georgian Bay, forming Cabot's Head.* It then gains the Manitoulin and Drummond Islands, where it has been described by Dr. Bigsby, and thence reaching St. Joseph's Island, the formation terminates in Canada."

"The important figure which the formation thus followed will make on the map of Canadian Geology may be estimated, when it is stated, that in this Province it is in all probability the uppermost solid rock not much less than 30,000 square miles of its surface,† thus constituting nearly one half of that which is likely to engage the early attention of the survey."

* * * * * * * * *

It is obvious, that as the geological features of Canada, form but a part of an extended area on the continent of North America, that any general view of them must comprehend a much larger territory than the Geographical boundaries of the province. A general sketch therefore, of the whole of this extended area, serves to connect and make intelligible the detailed observations that are made on the sectional portions of it; and in this short account of the general strata, which MR. LOGAN has judiciously furnished, there is a manifest advantage derived from the investigations that have been before instituted and carried on by the different States of the American Union, some of these States bordering on Canada in nearly her whole length. In availing himself of the labours of the American Geologists to illustrate the general relations of the rock formations of the province MR. LOGAN says:—

It will be convenient to divide the subject into two parts, and drawing a line along the Hudson River and Lake Champlain to Missisquoi Bay and thence to Quebec, to consider the region to to the west of this line separately from that on the south side of the Saint Lawrence to the east, there being certain conditions in the one that do not prevail in the other.

WESTERN DIVISION.

The western division, as connected with the geology of Canada, may be described as a gigantic trough of fossiliferous strata, conformable from the summit of the coal to the bottom of the very lowest formations containing organic remains, with a transverse axis reaching from the Wisconsin River and Green Bay in Lake Michigan to the neighbourhood of Washington, a distance of nearly seven hundred miles; and a longitudinal one extending from Quebec in a south-westerly direction, to some point, with which I am unacquainted, beyond the TenesseeRiver in Alabama.*

Contained within this vast trough and resulting from gentle undulations in the strata, giving origin to broad and anticlinal forms, there are three important subordinate basins, in the centre of each of which spreads out an enormous coal-field. One of these extends in length from the County of Logan to the southern borders of Kentucky, in a north-westerly direction to the Rock River in Illinois, where it falls into the Mississippi, a distance of three hundred and sixty miles, and in breadth from the mouth of the Missouri to the County of Tippecanoe, on the Wabash in Indiana, two hundred miles. Presenting an oval form intersected by the Rivers Illinois, Wabash and Ohio, and bounded by the Mississippi, which sweeps along nearly the whole of its western margin, this coal-field covers an area of 55,000 square miles. The second occupies the heart of the State of Michigan, and reaching 190 miles in an east and west direction from within thirteen leagues of the Lake of that name to Saginaw Bay in Lake Huron, and 150 miles in a north and south line from the neighbourhood of the Rivers Manistee and Ausable, to the source of the Grand River near Jackson, on the road between Detroit and St. Josephs, it exhibits an irregular pentagonal shape and comprises a superficies of 12,000 square miles. The third carboniferous area stretches longitudinally about 600 miles in a north-easterly course from the State of of Tennessee to the north-eastern corner of Pennsylvania, where many outlying patches belong to it, and 170 miles transversely from the north branch of the Potomac in Maryland, to the south-eastern corner of Summit County in Ohio, just twelve leagues south of Cleveland on Lake Erie. It possesses a sinuous subrhomboidal form and spreading over a surface somewhat larger than the first named coal-field, may comprise about 60 000 square miles. The Ohio and its tributaries unwater nearly the whole of it, and the main trunk of this great river serpentines through the centre of the region for about 400 miles of the upper part of its course. The Susquehanna and its tributaries intersect the north-eastern extremity of the deposit, and the vallies of denudation in which these waters flow, assisting the effect of a series nearly equidistant undulations in the strata, there break its continuity into the outliers alluded to, which generally rest on sinclinal mountain tops, in the interrupted prolongation of a number of narrow subsidiary troughs resulting from the undulations in question, and giving an irregular and deeply indented contour to the outcrop of the main body of the coal. The chief part of the outliers, as well as the

* On farther investigation it is found that Cabot's Head and the Manitoulin and Drummond Islands are composed of a limestone which probably occupies a higher position in the series of deposits, and that the primary rocks of the north-eastern and northern shores of Lake Huron will probably mark the boundary of the calcareous formation mentioned in the text.

† The rocks extending immediately under this surface will probably also include the two next succeeding formations resting on the limestone.

* See the geological Map of the Middle and Western States, lately published by James Hall, Esq., one of the State Geologists of New York.

main body of the deposit, and also the other two great coal-fields described, yield fuel of the bituminous quality; but to the eastward of the Susquehanna, there are three large outliers almost sufficiently important to deserve the designation of another coal-field, in which the fuel contained is of the anthracitic kind.

* * * * * * * *

From beneath the three great coal-fields which have been mentioned, the subjacent formations crop out in succession, surrounding their carboniferous nuclii with rudely concentric belts of greater or less breadth, according to the thickness or dip of the deposit, and taking a wider and a wider sweep as they descend in the order of superposition, while they conform at the same time in their superficial distribution to all the sinuosities and irregularities occasioned by geographical and geological undulations. The organic remains of these rocks proclaim them to be contemporaneous with the Silurian and Devonian epochs of Europe, including the old red sandstone; and the Pennsylvanian geologists compute that in their south-eastern development they attain the aggregate thickness of about 30,000 feet. But in the State of New York, where the quiet condition of the northern outcrop affords an admirable opportunity of determining with certainty all the relations of the deposits to one another, not more than one third of that amount can be made out. It would seem, therefore, if the many complicated folds existing on the south-east side have occasioned no error in the estimate, that the formations must thin down greatly towards the north.

* * * * * * * *

SERIES OF FOSSILLIFEROUS DEPOSITS.

Having thus traced as far as necessary the contour of the lowest deposits of the fossilliferous area under description, and having given the position and superficies of the coal-fields which spread out at the summit of the series, it will be understood that the whole of the space between the perimeter of the latter and the boundary of the former is occupied by the various belts or zones resulting from the outcrop of the successive formations.

The lowest of these fossilliferous sedimentary deposits is the sandstone, which has already been mentioned. It assumes various lithological appearances in different places, and in different parts of its vertical thickness.* At its base it is sometimes a quartz rock, so hard and vitreous as scarcely to be distinguished from the primary masses on which it rests, and it frequently presents the aspect of a conglomerate, as at Gananoqui, with large quartz pebbles in a matrix of fine sand. It is often an even-bedded, even-grained sandstone, yellowish brown and compact, or white, saccharine and friable. It is occasionally of a deep red colour in the lower part; and at Montmorency, near Quebec, Professor Emmons, of the New York survey, states it to be stained in parts by green carbonate of copper. The highest portion of the formation sometimes exhibits the character of a breccia, with fragments of a dingy calcareous rock united by an arenaceous cement. But the typical quality of the whole mass, as seen at Potsdam, in New York, where it is extensively quarried for economic purposes, is a yellowish brown sandstone, splitting into rectangular parallelopipeds of almost any required size. It is said to contain few fossils; a bivalve shell (*lingula oratu*) is considered characteristic, and at the top of the deposit fucoids exist. The total thickness of the formation is upwards of 300 feet. †

This silicious deposit passes into a sandstone of a calciferous quality, which the geologists of Pennsylvania class with the former, but those of New-York consider sufficiently marked to be taken as a distinct formation. It is in general a fine grained arenaceous limestone, with some beds of a pure calcareous quality. Towards the lower part it is sometimes drab coloured, yielding occasional beds fit for the purposes of water lime, and a little higher it is geodiferous, the geodes containing calcareous spar, sulphate of strontian, sulphate of barytes and sulphuret of zinc. The fossils of the deposit appear to be characteristic, and they consist of univalve and bivalve shells, corals and fucoids. Its thickness is about 250 feet.

To this succeeds the important calcareous deposit of which the course had been so extensively traced. In Pennsylvania it is taken as one formation, but in New-York it has been divided into two. The lower part consists of a dark irregular thick bedded limestone, containing frequent and irregular shapes of chert, replacing coralline organic remains. It has a thickness of one hundred and thirty feet, and upon it rests a dark bluish, even-bedded, compact, brittle, pure, limestone, occasionally yielding marble capable of a good polish but liable to fracture in the working. At the top of the general deposit, the bituminous shale predominates over the limestone, and affords a passage to the succeeding formation. To the student of North American geology, no formation deserves closer attention than the one just noticed. It is one of the most persistent of the whole series, both geographically and lithologically considered, and it abounds in peculiar and characteristic fossils, crustacean, molluscan, and coralline. In the New-York survey it is called the Trenton limestone, taking its name from the locality of its greatest observed thickness, which is about 400 feet.

The next deposit in the order of superposition is a black bituminous shale, differing very little from the argillaceous part of the previous formation, except that it is said to be a little firmer, and to have a double system of natural joints. It disintegrates easily under the general influence of weather, which change its colour to an ash gray. It has distinctive fossils, crustaceans, mollusks and graptolites, and a trilobite, to which the name of *triarthus beckii* has been given, is considered characteristic. The greatest observed thickness of the deposit in the State of New-York does not exceed 100 feet.

Upon the preceding lies a deposit of thin gray sandstone strata, alternating with fine easily disintegrating argillaceous shale beds of a greenish colour. This formation is considered to possess distinctive fossils, but the Pennsylvanian geologists have united it with the argillaceous shales that underlie it. Its thickness may be estimated at 1400 feet.

The next superimposed deposit is a gray, even-bedded sandstone of a rather fine grained, hard and durable quality, used for building purposes, and occasionally for flags and grindstones, with thin interposed layers of a greenish shale similar to that of the previous formation. It has some few fossils, and its thickness is about 100 feet.

The next in succession to the gray sandstone is a variegated red and green marly and shaly sandstone, of a crumbly nature, with which are associated some bands of quartzose gray sandstone, in some places yielding good flagstones, and in others good building stones. Brine springs issue from the formation, abundant in number, but scarcely strong enough to be converted to profitable use in the manufacture of salt. One of these exists at St. Catherines, in Upper Canada. The fossils of the formation are characteristic. They consist of bivalve and univalve shells and fucoids, and one of these (*fucoides Laranii*) is considered an unfailing guide in tracing the deposit, of which the thickness may be estimated at about 600 feet.

Upon the preceding rests a set of strata, consisting of bright green shales, associated with a partial bed of oolitic fossilliferous iron ore, of which the greatest observed thickness in any place is two feet, and interstratified with two bands of more or less impure limestone containing silicified organic remains. These remains are sometimes replaced by calcedony and agate, and geodes occur containing a number of beautiful silicious minerals, with sulphate of barytes, sulphate and carbonate of lime, and, in small quantities, yellow sulphuret and and green carbonate of copper. The fossils are numerous, and consist of trilobites, univalve and bivalve shells, graptolites and fucoids. Among the shells, *pentamerus oblongus* is abundant and characteristic. The thickness of the deposit is variable and may be taken at eighty feet.

*To be continued.*

* See Professor Emmons' State Reports on the Geology of New York.

† The thicknesses given in this general description are generally taken from localities in the State of New York where the formations approach Canada.

## SURGERY.

### CASE OF OBSTRUCTION OF THE LARGE INTESTINE IN WHICH THE ASCENDING COLON WAS OPENED WITH SUCCESS; THE PATIENT DYING THREE MONTHS AFTERWARDS OF ANOTHER DISEASE.—by Samuel Evans Esq., of Derby—communicated by Wm Bowman Esq., F.R.S. Assistant Surgeon to King's College Hospital.—*Proceedings of the Medico-Chirurgical Society of London.*

Lewis Street, æt. 23, a farmer, has been liable for several years to attacks of diarrhœa. In September 1843, he was seized with violent pains in the bowels resembling

colic, which lasted 13 hours; about the third week in Jan. the attacks recurred and became more severe on the 5th of Feb. The author saw him for the first time on the 7th.—He was suffering from severe intermittent pains in the abdomen, which was distended but free from tenderness. There was a distinct swelling in the right iliac region. His bowels had not been relieved since the 5th; opiates, active aperients, and stimulating injections were administered during five days without relieving pain or sickness, or procuring evacuations. On the 12th, and 13th, his sufferings were relieved by large doses of liq. opii. sedativus. From this time to the beginning of April, the size of the belly gradually increased; he also daily suffered many paroxisms of pain. At intervals, large quantities of flatus, and small quantities of clay coloured fæces escaped from the bowels. The patient's health became much impaired, and vomiting recurred almost daily. On the 25th of March, Callisen's operation as modified by Amussat for the formation of an artificial anus in the loins was proposed, but the patient yielded to the wishes of his friends in postponing it. The emaciation increased, and the abdomen became extended to the greatest possible degree; the evacuations entirely ceased, and the pulse became feeble and fluttering. April 9th:—the operation was performed; a transverse incision four inches long, was made in the right loin, the ascending colon was opened, and more than two gallons of semi-fluid clay coloured fæces were discharged. He recovered from the operation, and by May the 9th had gained flesh, and the wound in the intestine healed, but the evacuations escaped entirely by the artificial anus, being restrained by a plug in the orifice, which was removed four or five times a day. At the end of June he commenced passing diabetic urine, and suffered from thrist. July 2nd:—he rode a distance of 6 miles in an uneasy cart, and shortly after, symptoms of peritonitis supervened, and he died on the 5th. On examination of the body, the cause of obstruction was found to be a stricture in the colon, just beyond the angle formed by the junction of the ascending and transverse portions of the gut. The contracted part was almost as hard as cartilage, and would just admit a crow quill; its inner surface was ulcerated. The cæcum was enormously distended and nearly as large as a stomach of ordinary size; the ascending colon was much enlarged.

The author remarks that this is the eleventh case on record, in which Callisen's operation (modified by Amussat) has been performed in the adult, in consequence of the obstruction in the intestinal canal. From the previous history of the case, it would appear that the disease had been of slow progress and long duration, but at the period to which the operation was delayed, owing to the interference of the patient's friends, he was in so alarming a condition that it is impossible to imagine a case more unfavourable for it. Two months afterwards he was so much recovered that there appeared every prospect of his restoration to health, but these hopes were disappointed by his imprudence with regard to diet and exercise; as far as the operation was concerned the case was successful.

Sir George Lefevre observed that at all events this was a practical paper, and one of considerable interest. He was of opinion that in such cases, there was not only the mere local injury to be regarded, but that the whole alimentary canal suffered; the patient after such an operation should be kept in the recumbent position, and on spoon diet for months afterwards. The case showed what great liberties may be taken with the intestines; some time since he drew up the details of two cases, in which the intestine had been punctured, at St. Petersburgh, and had intended to lay them before the society, but he subsequently withdrew them, and published them in one of the journals. The operation was not performed with the view of producing an artificial anus, but to relieve the pain and other inconveniences caused by distension. In one of these cases the patient, a lady of high rank, was greatly relieved by the operation, which was performed by pushing a trocar into the distended colon, but she died in about eighteen hours after. In the other case, in which the same operation was performed, and was attended with immediate relief, the patient died in twenty hours. Sir George Lefevre then enquired whether this operation of puncturing the intestine for the discharge of flatus, had ever been performed in this country, with the view of affording transient relief in those cases where permanent benefit was not to be anticipated. In such cases relief may be obtained even at the eleventh hour, as was evinced by the details of the case which had been read before the society that evening, but he thought it a question whether it was altogether advisable to wait so long.

Mr. Benjamin Philips said there could not be any doubt as to the importance of this operation. It had been performed several times with more or less success, either to relieve obstruction in the bowels, or to remedy an imperforate anus, but as far as his knowledge extended, there had been generally a want of success attending it. The difficulties connected with it did not depend on the nature of the operation, but on the diagnosis, as it is not easy to discover the cause of the obstruction. It may be produced by an accumulation of fæces, which may exist for weeks, and yet be ultimately removed without there existing any necessity for an operation. If the obstruction were produced by disease in the rectum, by carcinoma, for instance, as was said to have been the case with Broussais, more perhaps might be said in its favor, as it would then offer a better chance of prolonging life. Even under such circumstances it might be doubtful whether the artificial anus would not prove a greater inconvenience than the existing disease. Disease in the rectum however affords a better reason for the performance of the operation, than when it is situated higher up in the intestine. In these latter instances it is difficult to ascertain the cause of the obstruction, and with regard to the case which had just been read, there was not any circumstance from which to draw conclusions as to the cause of the obstruction, whilst from the occasional passing of clay-colored fæces, it might have been regarded as caused by an accumulation of indurated fæces, instead of being a case of constriction, as it eventually proved to be. At the same time there would be a difficulty in making the selection of the part of the intestine which should be opened, as it might happen that the operation would be performed at the exact spot where the obstruction was situated.

Dr. Powell mentioned the case of an hysterical patient, who was liable to great obstruction of the bowels, which was always relieved by opiates and croton oil. The last time that obstruction existed, the bowels were not relieved for two months; injections were not of any service, but the constipation was removed by half grain doses of morphia with two drops of croton oil, exhibited night and morning, four doses being required before they took effect. He concluded therefore, that the attack of constipation was dependent on hysteria.

Mr. Davis of Hampstead mentioned the case of a man, who returned an invalid from the West Indies in the year 1800, and who was subject to attacks of spasmodic colic and constipation, for which aperients generally were inefficacious. His appetite was very good, but he occasionally rejected his food. This state would continue for fourteen or fifteen days, the man walking about the while, when it would be requisite to administer gamboge pill and small doses of the sulphate of magnesia, by which means the bowels were unloaded, and scybalous fæces discharged. In this state he would go on for about three weeks, when a similar train of symptoms would arise, and the same plan of treatment was of necessity resumed. This man continued to be subject to these attacks as long as he continued under

Mr. Davis' care. In another case, that of a lady, who had been recently confined, and who was very ill from the bowels having been much neglected, he exhibited appropriate remedies, and brought away numerous scybalæ. He (Mr. Davis,) mentioned these cases to show what might be effected by proper treatment in cases of obstinate constipation.

Mr. Solly thought that Mr. Phillips had very properly called attention to the difficulty of deciding in what cases it would be right to have recourse to this operation, and he believed that every one in practice must have met with cases in which they were not able to decide as to the nature and cause of the obstruction. A few years since he had seen a case in which a patient, labouring under a distended condition of the colon from a diseased state of the rectum, was tapped by mistake for dropsy, and died afterwards from peritonitis which supervened from the operation. He also alluded to cases in which the intestine was constricted by the formation of adventitious bands, as serving to complicate the diagnosis, and stated that about eleven years since he had attended a case with Dr. Sutton, of Greenwich, where he was called upon to pass a bougie. The patient died shortly afterwards, and when the body was examined after death, the colon was found to be firmly bound down and constricted by bands stretching across from the mesentery.

Dr. James Johnson was of opinion that in the case which had been described by Mr. Evans, that there could have been but little difficulty in forming a diagnosis as to the situation of the obstruction, inasmuch as a bougie could be passed very readily, and there was not any difficulty in throwing up two or three pints of fluid At the same time the seat of the distension shewed that the obstruction must be in the colon itself, and not in the rectum nor in the sigmoid flexure. The operation was, therefore, in every respect called for, and requisite. It is astonishing how long accumulations of fœces may continue without inducing serious mischief. In the case of a patient of his, there had not been any passage of fœces by the rectum for three months, and yet he ate and drank well, and was apparently in good health. The fœces were discharged by the mouth a few hours after taking food. There existed a large inelastic tumour in the hypogastric region. He did not think there was any reason to anticipate fatal termination in this case, and it became a question whether it would be advisable to perform the operation; and he was rather inclined to believe that an artificial anus would prove a greater source of annoyance than that which already existed.

Mr. Dunn mentioned the case of a child who was born with imperforate anus; an operation was attempted, but the colon could not be reached. After death, the body was examined, and the gut was found not to be larger in size than a crow-quill.

Mr. Blizard Curling observed that he was about to remark that it was not an easy thing to reach the colon, especially in infants when it is not in a state of distension. In one case that he had heard of, the surgeon had cut down upon the kidney, instead of the intestine. In a case of imperforate anus, in which the usual plan of proceeding was adopted unavailingly, he had proposed the operation in question, but it had not been acceded to. He had performed it, however, after death, and had found it not to be so easy as it is supposed to be. By going a little too near the spine he had come upon the kidney, and he had reason to believe that the same accident had occurred in operations on the living body. The operation might, however, be readily performed, by making the incision a little more externally, and then there would not be any difficulty in opening the intestine, if it were at all distended. He fully agreed with Dr. Johnson in the observations which he had made on Mr. Evans case, and he said that he had never met with any instance in which the situation of the obstruction had been more clearly made out. He thought too, that the result of the operation was such as to justify surgeons on future occasions in adopting it under similar circumstances.

Dr. Taylor said that if Mr. Evans was clear about the seat of the obstruction, he could not have done otherwise than operate, as his patient must else have died soon, and it was evident that his life had been prolonged by the proceeding. With regard to the nature of the obstruction, it had not been stated whether it was of a carcinomatous character or not; that, however, was probably a question which the microscope alone could settle. From the previous history of the case, it appeared to have been produced by simple inflammation. The patient had been subject to diarrhœa for years, which had most probably been caused by inflammation, followed by ulceration, cicatrization, and consequent contraction. Of this he had seen several examples subsequent to fever, in most of which the question as to the propriety of operating was not entertained, because the patients died of chronic peritonitis before the symptoms had assumed characters of sufficient severity to warrant such a proceeding. He had seen this contraction in different parts of the bowels after fever attended by inflammation, ulceration, and contraction in that canal, and he thought it might be regarded as a useful diagnostic sign in cases of obstruction, that the disease depended on a stricture and not on a mere accumulation of fœces, if the patient had been known previously to have laboured under inflammation of the bowels.

Mr. Hilton commended the proceedings in Mr. Evans' case, and stated that cases were now and then met with, in which the obstruction was caused by a twisting of the colon on itself. He had seen a case of this kind, and had proposed the operation, which, however, was not performed, until after death, when it was effected by means of a vertical, and not a transverse incision. It extended from the false ribs to near the crista of the ilium and was parallel to the abdominal muscles. He did not experience any difficulty in reaching the colon. He then alluded to Sir George Lefevre's observations on puncturing the colon, as connected with this operation, and said there was a marked distinction between the two proceedings, as in Sir George's cases, the peritonæum was wounded, an additional risk which was studiously avoided in Amussat's operation.

Dr. Watson observed that the conclusions which he drew from what he had read and heard respecting this operation, were that in some cases it was perfectly justifiable, providing that the patient's consent had been previously obtained, and the nature of the operation, with its disagreeable consequences had been fully explained to him. In that light he regarded the case in which Mr. Evans had operated, and he thought the adoption of that proceeding fully warranted by the history of the patient. On the other hand, the case which had been narrated by Dr. Johnson, was one not at all suitable for it; for although it must be very uncomfortable to use the throat instead of the anus for the evacuation of the fœces, he believed that the formation of an artificial anus would be a still greater evil. Other cases would, however, occasionally occur, in which it would be difficult to decide on the propriety of operating, without a due regard to all the attendant circumstances.—*Medical Times.*

---

In the Boston Medical and Surgical Journal of July 23rd, we find reported an interesting case of Gastrotomy, which was read before the Tennessee State Medical society by Dr. Manlove. The cause of the obstruction which led to the necessity of an operation, was in the author's opinion a retardation of the peristaltic motion of the intestines, the effect of adhesions formed between the peritoneum and the bowels. This, from inattention to the regular evacuation of the intestinal canal, induced accumulations of fæces at the point of greatest adhesion, and these increasing in quantity, by the obstruction of the canal, and the bending of it upon itself, caused a valvular impediment which no ordinary means could surmount. Coupled with the article which precedes the present one, which details a very important conversation occurring upon an interesting case of a similar nature laid before the Royal Medical and Chirurgical Society of London, the fortunate issue of the present operation, ought to direct attention to a means of relief in cases which if unassisted, would certainly prove fatal.

On the 7th of July, 1844, I was called to see Alfred, a colored boy, aged 17 years. He complained of some gene-

ral uneasiness of the abdomen, was labouring under febrile excitement, pulse 110. Learned that he did not recollect having a passage from the bowels for 12 or 15 days. On the 4th had walked several miles to a barbecue, and probably had indulged freely in eating. He had taken Epsom salts and castor oil; also several enemata had been administered by his master. Bled "*ad deliquium animi*," gave him a general warm bath, and directed 4 grains of calomel and ½ grain of opium every four hours, until three portions should be taken, to be followed by castor oil and spts. turpentine.

8th.—Medicine had been all taken; no evacuation of the bowels; had vomited once, throwing up the medicine. Pulse 130. Bled him, administered a stimulating enema, and directed calomel and opium as on the previous day. Visited him again in the afternoon. Condition found to be the same; no evacuation. Spent the night with him, and made every effort I could to procure evacuation of the bowels, but they all proved ineffectual. Vomited several times during the night. Pulse 120 and feeble. Abdomen tympanitic.

9th.—Dr. Ford was called in consultation. His condition remained the same, except that all the symptoms were now growing more and more alarming, with the certainty that death must speedily ensue without relief. Flexible tubes were introduced as far as possible into the intestines, and stimulating articles were thrown up so as literally to fill the lower bowels. These were all soon thrown off without any appearance of fæces. About 60 grains of tart. antimony were dissolved in water and introduced at two injections, with little or no influence on the general system. An emetic also of ipecac. was administered: emesis was readily produced, but no alteration in the symptoms. Being now night, it was thought advisable to wait on the means which had been used until morning.

10th.—Abdomen enormously distended; difficulty of breathing; extremities cold; pulse very feeble and quick; countenance anxious; no evacuation. Gastrotomy was considered the only possible means of even prolonging his life; and although the operation promised but little benefit, yet the certainty of death without it, justified us, in our estimation at least, in undertaking its performance. An incision was made in the median line, commencing about two inches below the umbilicus, and extending down towards the pubis four or five inches. The peritoneum and bowel along the lower half of the incision had formed a most intimate adhesion, and in cutting through the former an opening of about one fourth of an inch in extent was made into the latter. From the opening there proceeded large quantities of flatus and liquid fæces, as well as the oil and turpentine which had been taken. On further examination, it was discovered that the intestines were united to the peritoneum by extensive adhesions at various points within reach of the finger and probe. The wound was closed by sutures and adhesive straps, except the opening into the intestine. The amendment in all the symptoms in one hour was astonishing; the extremities became warm, the pulse slower and fuller, and during the morning he was able to fan himself, the weather being excessively warm. On the next day his appetite was good, and he continued to improve and to discharge the contents of the bowels through the artificial anus until the 17th day after the operation, when the bowels acted naturally, the opening having nearly closed.

It will be proper to state, that about six months before his present illness, the boy received an injury from the falling of a piece of timber on the abdomen. The hurt caused him to keep his bed several weeks, and hence, no doubt, the adhesions which were discovered in the operation. The boy is now well, (nine months after the operation.)

## ON HARE-LIP.

By Professor P. Dubois.

In this communication it is my intention to draw the attention of the Academy to a question still enveloped in doubt, and on which I hope to throw some light; I mean congenital hare-lip, and the age at which the operation ought to be performed. The reflections here presented are founded on facts observed by myself, and therefore must be rapidly and briefly indicated, and I trust that the objections made by a great number of eminent surgeons, will be successfully combated by the recital of these facts, and by the examination of three children now present. (1)—*Case* 1. About four years ago, a colleague requested me to examine his child, affected with labium leporinum; he wished the operation to be performed immediately, but I reminded him that such was not the opinion of my father, whose pupil he had been, however, as he insisted, and as I was prevented operating on account of a phlegmon of the arm, Dr. Jobert de Lamballe was called in and performed the operation with his usual skill. The child took the breast immediately after, and cicatriza ion was complete in a few days; unfortunately six months after, the infant died of a disease quite different from that under consideration. *Case* 2.—A few months after I was called in by a *sage femme*, pupil of the *Maternite*, to see a child just born with a hare-lip; emboldened by the success of the preceding case, I operated the next day; a cure was effected, but the child, brought up by hand, died for want of proper care. *Case* 3.—A month after, I operated on a child born the day before; the hare-lip was on the left side; the cure was immediate and complete. *Case* 4.—On the 8th of last April, one of my patients was delivered of a child affected with a hare-lip on the left side; the operation performed the next day succeeded. *Case* 5.—A fortnight after, Dr. Sestier requested me to examine a child born about the same time as the preceding, affected with hare-lip on the left side, complicated with fissure of the velum palati and the bones of the palate; operation performed immediately with success. *Case* 6.—A short time ago a child was born in the Lying-in-Hospital with hare-lip on the left side, complicated with fissure of the velum palati alone; I operated on it successfully five days after birth.—*Case* 7.—Finally, Dr. Depaul, my former *Chef de Clinique*, has performed it with a similar result.

From these facts it may be concluded that hare-lip may be operated on with success in very young infants, and that the facts recorded are too numerous to be considered as exceptions. As to the *modus operandi*, after cutting off the edges of the division, they were united by means of the pins employed by naturalists, and the twisted suture (the pins are scarcely strong enough;) no bandage was applied because it is easily put out of order, nor did I have recourse to the hands of an assistant on each side, as recommended by Dr. Bonfils, of Nancy; the pain was acute, but soon over and forgotten; the dressing was so simple that often it was done without waking the child. Professor A. Berard: Might I ask Professor Dubois what is meant by dressing? Professor Dubois: I mean changing the threads, which was performed twenty or twenty-four hours after the operation; the pins were removed on the third or fourth day on account of there being no bandage; in none of these infants did the pins divide the tissues, for though it is true that they are softer, still their vascularity being greater renders them capable of resisting effectually: very little blood, except in one case, was lost; in two it was swallowed and vomited up again in one, whilst in the other it passed in the stools, without giving rise to any accident. The

(1) These three children were examined by me. In one the operation was too recent to present any definite result; in the other two the cicatrices were perfect and hardly perceptible.—[G. de B.]

breast was given immediately after the operation; this is important, since it forms one of the counter-indications to its immediate performance, and it was on this account that when operated on at a very early age, the infants were made to fast; now I consider the unsuccessful results might rather be attributed to this abstinence, than to the operation itself. As to my patients, two were fed by hand, the others suckled, and that immediately after the operation, except in one case, in which a few hours intervened. Another objection is the screams to which the operation gives rise, but, in general, children do not cry much, and even when they do, if the pins have been properly placed, they will not be put out of place; I had a proof of this in one of my little patients, who screamed so much that I regretted having performed the operation; but the cicatrization was more perfect than in the others. But it may be said, nothing is gained in operating so young, since it is as successful at a later period, but is it not natural to suppose that the earlier it is performed the less the cicatrix will be visible? A distinction ought here to be made as to the necessity of operating, for instance, if the child is sickly and affected with hare-lip complicated with division of the bones, it ought not to be performed, but only in strong and healthy children, and when the division affects only the lips. As to the consecutive accidents they were very, slight, and sometimes absent altogether. A curious coincidence here exists, which is deserving of being recorded, viz.:—that during the month of May, not only numerous cases of hare-lip were observed, but likewise several other deformities of the extremities. From what precedes it may be concluded, 1st that the operation may be successfully performed in very young children; 2nd that it gives rise to no accidents; 3rd that the objections made against it are not sufficient to cause it to be rejected; 4th and that the opinions generally ought to be modified, if not abandoned. This memoir was received with marks of satisfaction by the whole assembly. *Dr. Husson*,—I thought I heard Professor Dubois explain why the left side is more frequently affected than the right. *Professor Dubois* in reply, said, that he had stated nothing of the kind, besides which, he could give no plausible cause of this extraordinary circumstance. *Professor Roux*, after thanking Professor Dubois for his interesting communication, said that he considered it would be unfortunate, if, on the authority of Prof. D's name, it was concluded that the operation ought to be performed early in every case. The facts recorded are relative to simple uncomplicated hare-lip, and in this respect he, (Prof. R.) coincided in a great measure with Prof. D., although he is always fearful of dangerous results, consecutive to operations in very young children, the more so as he has witnessed several which terminated fatally. There is, however, considerable advantage in operating when there is a fissure of the roof of the mouth, because the soft parts being united, the anterior portion of the bony palate is closed, leaving only the posterior, which would require, at a later period, the operation of staphyloraphy. As to the cause of the frequency of the disease on the left side, Professor Roux attributed it to the inequality of the primordial forces distributed to the left side of the body. *Professor Dubois* in reply said he thought the operation ought never to be performed when complications exist; that the junction of the lips of the wound is sufficient to stop the hæmorrhage; that it is on this account that the suture is drawn somewhat more tightly at first; and that he does not consider it necessary to detach the upper part of the solution of continuity from the maxillary bone.

---

An epidemic raged among horses in England in June last. Mr. Percivall describes the post mortem appearances to be, signs of inflammation of the Pleura, exudation of albuminous matter on its coats, hydrothorax, hepatization of the lungs, with tendency to development of tubercle.

## PRACTICE OF MEDICINE AND PATHOLOGY.

### CONTRIBUTIONS TO THE DIAGNOSIS AND PATHOLOGY OF THORACIC DISEASES.

By Robt. M'Donnell, *M.D. Lecturer on the Institutes of Medicine, University of M'Gill College, Montreal; Licentiate of the King and Queen's College of Physicians, and of the Royal College of Surgeons, Ireland; Member of the Pathological and Surgical Societies of Dublin; Corresponding Member of the Medical Society of Geneva.*

[*Continued from page* 96.]

II.—ON THE OCCURRENCE OF CREPITUS IN THE LUNG AFTER THE ABSORPTION OF PLEURITIC EFFUSION.

I have frequently been struck with the occurrence of a particular physical sign in cases where a pleuritic effusion has been absorbed, and, as I do not perceive any allusion made to it in recent works on this subject, not even in that excellent and elaborate article on Empyema, in the Cyclopædia of Surgery, by Professor Walshe, of London, or in his treatise on Auscultation, I conclude that it has escaped the attention of observers. This sign is a peculiar form of *crepitation*, so completely resembling that of pneumonia that I have known it mistaken for the rale so characteristic of that disease, and to have led the practitioner to adopt a course of treatment, which, it is needless to add, would not have been pursued, had he been acquainted with the frequent occurrence of this phenomenon in cases similar to those I am about to describe. In the first case I observed it, the pleuritic effusion was attended with extensive bronchial respiration, which, as is usual, gradually diminished as the effusion was absorbed, when just as it was concluded that the whole quantity of the fluid was removed, a distinct, loud, and sharp crepitus was heard, nearly all over the lung previously the seat of bronchial respiration. The crepitus gradually became less evident, and finally disappeared, leaving the lung free, and the respiratory murmur pure and loud. I had afterwards other opportunities of examining this sign, but in no instance were the peculiar characters of it better marked, than in the case of a young woman of a full plethoric habit admitted into the Meath Hospital under the care of Dr. Lees. On examination she was found to labour under effusion into the right pleura, extending up as high as the spine of the scapula, and, in addition, she complained of the usual symptoms of this affection. She was treated energetically, and about a fortnight after, all traces of the disease had disappeared, except a slight amount of dulness, and, during inspiration, *a sharp and distinct crepitus*, conveying the idea of its being generated on the surface of the lung. It extended over almost every part previously occupied by the dulness, and was not accompanied by any other rale or bronchal respiration. There was no dyspnœa, cough, rusty-coloured expectoration, or pyrexia, yet from the slight dulness which remained after the absorption of the fluid, and the sharp crepitus, it was almost impossible to distinguish the signs from those of pneumonia. In a few days, however, this crepitus gave way to pure and distinct respiratory sound, and the patient gradually improved, and was soon discharged, perfectly free from the least trace of pectoral affection.

The next case is that of a small boy, aged eleven, who had laboured under pleurisy with the effusion of the right side, which had undergone absorption, leaving the side quite clear on percussion. On placing the stethoscope to the chest, a dry crepitus was extremely audible; it was only heard on forced inspiration, and was not audible either during expiration or ordinary inspiration, and was unaccompanied by any other kind of rale. The boy had not, during any part of his illness, exhibited a sign or symptom of pneumonia, and his expectoration had never displayed the least trace of the pneumonic character. When listened to atten-

tively, the sound gave the idea of being formed by the rushing of air into cells partially compressed and the seat of slight infiltration of thin fluid, and to proceed from the surface of the lung as if generated in the superficial cells, an opinion confirmed by the fact of its being produced only on his taking a deep inspiration. I examined this boy daily for the next five days, and though at each time the sound had diminished greatly in its intensity, it still preserved its dry crackling quality, exactly like the dry crepitus of pneumonia.

Another instance is that of a strong, healthy woman, about thirty years of age, who was admitted into the Meath Hospital, under the care of Dr. Stokes, with extensive effusion in the left pleura. Previous to her admission she had been attended at her own residence, by my friend, Professor Geoghan, and the treatment he commenced was continued while in hospital. The dulness extended up the spine of the scapula, and was accompanied by bronchial respiration and œgophony, but no crepitus or bronchitic rale could be heard, nor had she any of the characteristic symptoms of pneumonia. The bronchial respiration was soon replaced by respiratory murmur, at first feeble, but it soon became louder and more distinct, and now a well marked, *dry, crepitating rale* was audible during ordinary inspiration, but becoming more evident on taking in a deep breath,—it was unaccompanied by dulness, bronchitic rales, friction, or any other abnormal sound, and she had no cough, expectoration, difficulty of breathing, or pyrexia. It continued to present the above characters for the next four or five days, and then gradually disappeared.

In the case of a gentleman whom I have lately been attending, the same sign was observed. He had laboured under pleurisy with effusion into the right side of the chest, for nearly a month before I saw him. The whole posterior and lateral portions of the side were perfectly dull, as high up as the spine of the scapula and to the axilla, and all over this portion the respiratory murmur was scarcely audible, but there was no trace of bronchial respiration. He had cough, without any expectoration, of a hacking, teazing character, and his pulse was 120, full and strong; besides these signs he presented the usual group of symptoms noticed in such cases. A fortnight after, the dulness had greatly diminished, and the respiratory murmur could be heard throughout the entire lung, attended with a *sharp dry crepitus*, at the end of the inspiration, presenting quite the character noticed in the preceding cases. It was in this instance the more likely to lead to error, from its being attended with dulness, the result of the pleurisy, but at the same time the patient's state indicated no new invasion of disease. His breathing was easy, his cough gone, his countenance placid, and his pulse, which for several days, remained at 120 and 100, had fallen down to 80, a combination of favourable symptoms irreconcileable with the notion of a new inflammation being set up.

In the foregoing cases, I have only given so much of the details as have borne upon the point, to which I wish to draw attention, and I have purposely omitted a minute history of the diseases, or of the treatment employed for their removal, for in neither of these particulars was there anything sufficiently remarkable to be worthy of record. Since my attention was first attracted to this point, I have found it follow pleuritic effusion so frequently, that it is surprising it should have escaped the notice of the many acute observers who have laboured in this field, and I cannot account for the fact, only, by supposing that they have looked upon it as an indication of pneumonia, and have probably been led to pursue modes of treatment calculated to interfere seriously with the convalescence of their patients. It may be asked what condition of the lung does it indicate, or how is it produced? At one time I considered that it was produced by the rushing of air into cells that had been completely or partially compressed by the fluid, but on making patients with healthy lungs, empty these organs to the greatest degree, and then inspire deeply, so as to fill the superficial cells, I could hear nothing more than the rustling sound occasioned by the air rushing into innumerable cells, but in no instance could I hear the crepitating rale, already alluded to. With the same view I examined most carefully a patient of Dr. Stokes's, on whom the operation of paracentesis was performed for chronic hydrothorax of the left cavity of the chest, producing great displacement of the heart, and dilatation of the side. When the fluid began to flow, we could hear the gradual expansion of the lung, indicated by a rustling murmur, which ceased as soon as the finger was placed on the opening, and was again resumed the moment the fluid began to flow out. Now, in this instance, we had an excellent opportunity of examining the phenomena attending the expansion of air cells previously compressed (for in the lower portion of the chest the respiratory murmur was dull), and yet neither during their expansion, nor after their return to their normal state, could the least approach to crepitus be heard. We cannot, therefore, I think, refer this phenomenon solely to the entrance of air into the compressed cells, for we should then expect to find it occurring in every instance, where an effusion, giving rise to bronchial respiration, becomes so diminished, as to allow of the cells being dilated, and a healthy respiratory murmur to take the place of the bronchial breathing—but such is not the case. But if, in addition to the compression of the cells, we have them infiltrated with serum, the result of congestion produced by the impediment offered to the free circulation of the blood, through the compressed lung, as no doubt is the case in some instances (for we know that compression of the vessels of the lung from pleuritic effusion, may take place to such an extent, as actually to produce gangrene of the organ, and consequently may, in a less severe degree, produce congestion and œdema of its surface), we have a condition of parts that may account for the sign. If the cells were *fully expanded* and filled with serum, as in the ordinary form of œdema of the lung the rale would present the loose subcrepitant character, but being *partially compressed* and infiltrated, the rale produced by the entrance of air acquires the sharp and fine tone heard in pneumonia. As, however, I have had no opportunity of confirming this opinion by anatomical examination, I merely offer it as the best I have been able to form, and shall leave the reader to adopt any other he may think capable of affording a more satisfactory explanation of the fact.

When this sign is accompanied with the dulness that so frequently remains after a pleuritic effusion has been quite absorbed, it is, of course, more likely to lead to the opinion, that the patient is labouring under pneumonia, than when it presents itself alone, particularly if there be still some pain in the side, and quickness of pulse; but in all the cases in which I observed it, the symptoms of pleurisy had nearly or completely disappeared, and the easy and comfortable condition of the patient, the quiet pulse, cool skin, absence of cough and characteristic sputa—all were opposed to the supposition of inflammation being present. But it is not to be wondered at, should mistakes of the kind be frequently made, for writers of the highest repute have spoken so oracularly upon the value of a fine dry crepitus as pathognomic of pneumonia, that it may appear almost a heresy to dispute the value of the sign, or assert its occasional occurrence in other conditions of the lungs.

Thus we find an excellent lecturer state, that "if the ear be applied to the surface of the chest, with or without the intervention of the stethoscope, and the portion of the lung subjacent to that surface happen to be in the first stage of inflammation, that of engorgement, what does the lung *say?* what audible notice does it give of its morbid condition?—Why it speaks very plainly. You hear a peculiar crackling sound; the smallest and finest possible kind of

crepitation; which has been happily illustrated by saying that it resembles the multitudinous little crackling explosions made by salt, when it is scattered over red hot coals. Andral has another resemblan e and not a bad one; he says 'The no'se is often like that which is produced by rumpling a very fine piece of parchment.' Dr. Williams observes that a pretty correct idea of this sound may be obtain d in a ready way, by rubbing between the fingers and thumb a lock of one's own hair, close to the ear. Laennec calls this *crepitant ronchus;* I would speak of it as *minute crepitation;* or the *crackling of pneumonia.* This may be heard in a very limited spot in the beginning. And what an important sound it is! It is a direct symptom, having immediate reference to the structure of the part. 'And' (says Dr. Latham) 'if we consider what the part is, and what the disease—the part the lungs, and the disease inflammation we cannot too highly value this single symptom (simple and mean as it may seem) which gives the earliest and surest intimation that such a disease has begun, as tends to disorganization, and the inevitable loss of life, unless quickly arrested by its counteracting remedy.'"—(*Watson's Lectures on the Practice of Physic.* vol. ii. p. 75).

In the above extract we find two distinguished physicians declare that the existance of a crepitation *alone* is sufficient for the diagnosis of pneumonia, and were it not that this view is extensively entertained, I should not have put together the remarks contained in the foregoing pages.—Most assuredly crepitation is an invaluable sign, *taken with other symptoms;* but, if taken alone, uncombined with dulness, pain, difficulty of breathing, anxiety, quick pulse, and other febile symptoms, it is not (as I think the foregoing observations satisfactorily prove) sufficient for the diagnosis of pneumonia.

### III.—A PECULIAR FORM OF DISSECTING ANEURISM OF THE THORACIC AORTA.

A woman about fifty years old, an inmate of the South Dublin Union, got permission to go out into the town, and remained absent for six or seven hours. On her return in the evening, she ate her supper as well as usual, and nothing remarkable was observed about her. She went to bed at the usual hour, and slept well till towards morning, when she awoke, complaining of excruciating agony in the epigastric region. The resident medical officer visited her, and from the fact of her being subject to attacks of colic, ordered her an anodyne draught, and warm stupes to the abdomen. In about an hour after his visit, she suddenly expired; and on examination the following appearances were detected:

The pericardium, on being opened, was found to contain about four ounces of serum tinged with blood, and some coagula; the membrane was, in other respects, healthy and free from any trace of chronic or recent inflammation.—Toward the apex of the pericardium, we were struck with the remarkable appearance presented at the origin of the great vessels, where there was a large and firm mass of coagulated blood, completely surrounding them, and bound down by the thin layer of serous membrane, which passes up from the heart along the vessels, to be reflected on the fibrous layer of the pericardium. This coagulum was firm, and of a dark colour, and uniform consistence; the membrane covering it was quite transparent. We next cut into the left ventricle, which was both dilated and hypertrophied, and then we slit up the aorta as far as the descending portion when the appearances, delineated in the drawing, were exhibited. The semilunar valves were all in that condition termed atrophy, viz., they were perforated in different parts but more especially towards their free margins, with small round, and oval-shaped holes, and in other situations they were much thinned. The aorta, in the situation of the attachment of the valves was healthy, but about an inch from this situation, we discovered a laceration extending transversely, and with edges as well defined as cut with a scalpel; it penetrated the internal and middle coats of the artery, but left the external one quite whole; it was one inch and three-eights in extent, and from it, a probe could be passed *downwards*, between the external and middle coats, as far as to a level with the upper border of the semilunar valves, but farther than this, *i. e.* behind the sinuses of Morgagni, it could not be passed. The orifice of this slit was partially closed by a coagulum of pale fibrine, and on tracing this up we found that it lay between the external and middle coats of the vessel, but did not extend far, and and was not attached. We then passed a probe upwards, and found that it advanced as far on the right side as to the division of the innominata, and for about half an inch along the course of the left subclavian and carotid arteries, to which extent the middle tunic of these vessels was separated from the outer one, but the space was not occupied by a coagulum, it appeared as if the separation had been the effect of a violent pumping of blood between the coats of the vessels, which had afterwards burst into some other situation, leaving this space empty except towards the laceration, where, as I before stated, we found a pale fibrinous clot.

On proceeding with the dissection, we found the opening in the cellular coat, through which the blood escaped; it was round, about the size of a fourpenny piece, and was filled with a dark coagulum which extended downwards, closely embracing the aorta, and separating this vessel from the pulmonary artery, at the exact point where, in health, they lie in apposition. In this situation, the coagulum exercised a considerable compression on the pulmonary artery by which the vessel was much flattened. The coagulum lay beneath all that portion of the reflected layer of pericardium, extending from the zonæ tendineæ of the right and left ventricles to where it is reflected on the under surface of the fibrous layer of the membrane. The serous membrane was perfectly whole, except at a small point corresponding to the junction of the right ventricle with the left auricle, where there was a small aperture, through which the small quantity of blood in the bag of the pericardium had evidently escaped. The clot was hard and solid, and was fixed in its position, from its being completely entangled in the cellular tissue lying between the serous membrane and the outer coat of the arteries, and between these two vessels, at the point where the pulmonary artery passes anterior to the aorta; in this spot the coagulum was thicker than in any other.

The coagulum occupied, exclusively, all that space external to the vessels, and underneath the serous membrane; it passed downwards on the auricles to where they join the ventricles, and it also passed some way upwards, beneath that membrane which anatomists describe as descending from the deep layer of the cervical fascia, to become continuous with the fibrous layer of the pericardium.

In other respects the aorta was extensively diseased, being thickly coated from the commencement of its transverse portion, all along its descending course, with bony plates and atheromatous deposits. Indeed, the only part of the artery which appeared free from this disease, was the very situation where the laceration took place, for immediately to the left of the opening there was another large osseous deposit. On comparing the middle and internal coats of the artery at the seat of the rupture, with other parts, they were found to possess scarcely half the thickness and were much more friable, though the vessel did not present, in any part, traces of acute inflammation. Towards the commencement of the arch, the vessel was somewhat dilated, but not to a greater extent than is ordinarily observed in individuals of her age.

The mouth of the innominata was filled with a dark and firm clot, which extended for some distance along this vessel and its two divisions, and appeared to have been produ

ced by the mechanical pressure exercised on it by the clotted blood which lay between its outer and middle coats. The lungs and liver were greatly engorged, no doubt the result of the mechanial pressure exercised on the veins leading from them, and of the almost complete obliteration of the cavities of the auricles.

The very able paper, in a late Number of the *Edinburgh Medical and Surgical Journal*, by Dr. Peacock, on Dissecting Aneurisms, renders it unnecessary for me to make any remarks on this affection; but though he has collected and analyzed almost every case now on record, I do not find that there is one resembling that now detailed. In all those mentioned in his elaborate essay, the blood after separating for a distance, more or less extensive, the outer from the middle coat of the vessel, made its escape at once into some of the contiguous cavities. In my case it not only followed the ordinary method of dissection, but on escaping through the outer coat of the artery, insinuated itself into the cellular tissue connecting this coat with the serous covering derived from the pericardium, and lying between the aorta and pulmonary artery, thus forming a firm circumscribed coagulum.

This case afforded a good illustration of what has been noticed by various writers, viz., the great facility with which the external coat can be separated from the middle, in dissecting aneurism. This circumstance has been alluded to by Morgagni* (who was, I believe, the first to describe this disease, and has given two cases of it, with great minuteness of detail), as also by Guthrie,† and Henderson.‡

## IPECACUANHA IN EMETIC DOSES, AS A POWERFUL RESTORATIVE IN SOME CASES OF EXHAUSTION AND SINKING.

By John Higginbottom, F.R.C.S., Nottingham.

*(Read before the Nottingham Medico-Chirurgical Society, May 23, 1845.)*

In the year 1814, I was first led to see the extraordinary beneficial effects of ipecacuanha as an emetic, in a female forty years of age, who was in a sinking state, in the last stage of cholera; her countenance was shrunk, extremities cold, cramp in the legs, and other symptoms of approaching dissolution. I had previously attended two similar cases, where I had given opium, brandy, and medicinal cordials, and both patients died. I was induced, in this instance, to give a scruple of ipecacuanha, from having frequently seen the good effects of it in the early stage of the disease. After the lapse of two or three hours, I again visited my patient, fearing I should find her dead, but, to my great pleasure and surprise, so great a change for the better had taken place as to appear almost incredible; the whole of her body was of a natural warmth, the dangerous symptoms had disappeared, and she made no complaint, except that she was very weak. She had no further unfavourable symptom of the disease, and was soon convalescent.

My confidence in the ipecacuanha, as a remedy in such cases, has now been confirmed during the practice of thirty years; the purging, vomiting, and cramp, often entirely cease after the emetic operation of the ipecacuanha, but I have thought it proper to give, in about two or three hours after the emetic, a pill, with a grain of opium and five grains of the blue pill, to allay any remaining irritation of the stomach and intestines, and an aperient, with one scruple of rhubarb, and two of the sulphate of potash, to assist the natural action of the bowels, and a simple saline effervescing draught every two or three hours afterwards; weak tea, well-boiled gruel, milk, with sage or arrow-root as nutriment, and diluents.

### UTERINE HÆMORRHAGE.

The next case which attracted my particular observation was the utility of ipecacuanha in severe uterine hæmorrhage. I attended the patient three times in labour, in the years 1821, 1823, and 1826, and each time with most severe flooding immediately after the separation of the placenta. I employed the usual remedies, such as the sudden application of cold water to the abdomen, pressure to cause contraction of the uterus, with the administration of opiates, wine, and brandy, which were at that time common remedies. These were cases of great anxiety, and I had to remain with my patient several hours before I thought it was safe to leave her.

In her third confinement, I was afraid she would die.—After having used all my remedies, and having given her half a pint of brandy and a pint of port wine, which was of no avail, it occurred to me, that in the former cases in which I had attended her, when I had used the means to check the hæmorrhage, that there was no amendment until she had ejected the contents of the stomach. I was, then, most anxious that vomiting should take place, in hope of relief, as she was rapidly sinking. I thought that as vomiting had been so benificial to her before, I was in this case justified in producing it by giving an emetic. I directly gave her a drachm of ipecacuanha; a full vomiting succeeded, and a large quantity of fluid was ejected. I was much struck with an expression of my patient, which I had several times heard before in similar cases, after vomiting. After a deep sigh, she said, "O! I'm better; I'm better now." The hæmorrhage ceased directly, and did not return; the symptoms of sinking abated, and the patient appeared in her natural state of body, but very feeble. A little plain gruel was all the nutriment given her, and she recovered gradually from her weak state. I attended the same patient three times afterwards, in the years 1827, 1829, and 1831, and what is very satisfactory in favour of the secale cornutum, which was about that time becoming more used in this locality, I gave, in every case, half a drachm of the powder before the birth of the child, a second such dose after the birth, before the separation of placenta. This remedy had the desired effect of preventing hæmorrhage, so that I had no further need of the ipecacuanha, or, indeed, of any other remedy.

Several years ago, I had a patient, on whom the secale cornutum had no effect in preventing hæmorrhage, and I gave the ipecacuanha with a favourable result.

For nearly twenty years, I had lost all confidence in the diffusible stimulants, such as wine, brandy, &c., in uterine hæmorrhage, from a conviction that they increase the arterial circulation, and, consequently, the hæmorrhage, and I find that opinion corroborated by the writings of Drs. Clutterbuck and Ramsbotham.

The utility of ipecacuanha in uterine hæmorrhage has been proved by Doctor Osburn of Dublin, but I am not aware that he has recommended it in extreme cases of exhaustion or sinking.

### BRONCHITIS.

I have found an emetic dose of ipecacuanha a very valuable remedy at that stage of bronchitis where a sudden, low, or sinking state has come on with oppression at the chest, and the expectoration difficult, endangering suffocation.—Vomiting with ipecacuanha has not only soon relieved these symptoms, but has roused the whole system, and has produced such a decided change, as to render the patient convalescent in a few days. I have never seen the same good

* "Animadversumque est exteriorem tunicam a trunco, ramisque perfacile detrahi non secus ac se diu in aquâ esset macerata."—Morgagni, Epist. An Med. xvii, 28.

† "The coats of the aorta were all easily separable, by the fingers, from each other, and softer and more readily broken than natural."—Guthrie, p. 44.

‡ "The outer coat, with an adhering lamina of the middle, having admitted of being detached with a facility not much less than that with which two moistened pieces of paper may be separated."—Henderson.—Cormac's Journal, vol. iii. p. 628.

effects in such circumstance produced by any other remedy. The two following cases are of that description.:—

"Mr. D——, aged sixty, an innkeeper, of a gross habit, but not considered intemperate, and had been much reduced in consequence of a neglected erysipelatous inflammation of the leg and thigh; this had in some measure subsided, but he had at the same time bronchitis, attended with a troublesome cough, difficult respiration and expectoration. A sudden state of sinking came on, with increased dyspnœa, and a feeble quick pulse. I gave half a drachm of ipecacuanha in a little water; he vomited at different times for two hours: the cough and dangerous symptoms were much relieved; he had no relapse of the low or sinking state, and he gradually recovered under a common mild treatment."

"Mrs. C——, aged seventy-eight, had an attack of the prevailing influenza; saline aperients, with diaphoretic and expectorant medicines had been given for about five days, when a low, sinking state came on, with difficulty of breathing. I was inclined to give an emetic of ipecacuanha as the most probable remedy to afford relief. I named it to her daughter, fearing the old lady would object to it. I was glad to find my patient would take it; and I may here mention the favourable idea patients sometimes have of an emetic, imagining that vomiting enables them to throw up the phlegm. I gave her half a drachm dose of ipecacuanha which had the desired effect of completely relieving her.—I was only required to visit my patient for five more days, she being then quite convalescent."

The following observation in Dr. Johnson's Review, of April, 1844, is corroborated by the above case, and, I have no doubt, will hold good in a variety of diseases, both in the commencement and in the sinking stage of disease:—"The use of emetics (I would say ipecacuanha, from the great safety of its operation) is far too much neglected in the present day, and most practitioners are unnecessarily timid about using them to old patients; a single emetic will often effect more good in the course of a day or two than other remedies in a week or two."

CASE OF SUSPENDED ANIMATION.

I was called, about ten P.M., to visit Miss S——, aged eighteen. The messenger, her sister, informed me she was afraid she was dying. I saw her in about ten minutes: my first impression was, that she had taken poison, until assured of the contrary by her mother. She appeared in a state of asphyxia. Her extremities were cold, face livid and swollen, or the appearance of being puffed up; no pulsation at all perceptable in either wrist; her mouth, was open and her lower jaw fallen; indeed she appeared to be dead. I ordered her feet and legs to be fomented directly with hot water by means of flannel, and a hot oven shelf, enclosed in flannel, to be placed under the legs. I poured down her throat half a drachm of ipecacuanha in water,—for she was incapable of swallowing,—then I rubbed very freely the whole length of the spine with the acetum cantharides.—The emetic not operating in a few minutes, I gave another half drachm of ipecacuanha, and, shortly after, there was a convulsive motion of the diaphragm, followed by vomiting she ejected some very thick, slimy mucus. On still rubbing the blistering vinegar along the spine, she gave signs of uneasiness in her countenance, and expressed her pain by saying "O!" I remained with her until after midnight.—Before I left her, she had become generally warm throughout the body, and could speak in a very low voice, but there was no pulsation in either wrist. I prescribed a mixture with aromatic confection and camphor mixture, to be given every hour, and a little gruel, or other light nourishment, occasionally. I left particular directions to send for me if she had any unfavourable change. The following morning she was quite recovered, but very feeble; she had no recollection of her illness, and could give no account of the cause. She had been sewing during the evening, sitting with her back to the fire, had only taken a potato for supper, and on going out of doors into the yard, she became suddenly chill and faint, complained of pain between her shoulders, and felt very ill indeed. She then went to bed and became sick, and vomited a little watery fluid, and said she was going to die. A sudden swelling of the face came on, succeeded by a convulsive motion and stretching of the whole body; then followed the state in which I found her. No further medical treatment was required but an occasional aperient, the swelling of the face was several days in subsiding.

SINKING DURING THE PUERPERAL STATE.

Mrs. B——, aged twenty-three years, very delicate, and pale complexion, I attended in her first labour on the 12th of March ult., which was very protracted and severe, and and being attacked with puerperal convulsions, I had to take about twenty ounces of blood from the arm, and found it necessary to perform embryotomy. She was exceedingly low afterwards, but gradually recovered for eight or nine days, requiring no other medical treatment than mild aperients and injections. About the ninth day she complained of severe pains in the course of the colon, particularly at the caput coli and the sigmoid flexure. Mustard plasters were applied, and active purgatives, with benefit, but a continued vomiting came on, attended with considerable lowness. Dr. Hutchinson was called in to visit her with me. Injections of half a pint of beef-broth with half an ounce of spirits of turpentine were administered every four hours; a common blister of cantharides was applied to the scrobiculus cordis; plain gruel or other light nutriment was given as most likely to remain in the stomach. The vomiting still continued; the turpentine injections occasioned much pain after they were administered, and there was a very alarming increase of exhaustion and sinking.

In this case it occurred to me that an emetic dose of ipecacuanha was the most probable remedy to rally the sinking powers, and with the concurrence of Dr. Hutchinson, I gave half a drachm and remained with her during its operation.

A fuller vomiting was produced than I could have expected, although it was small in quantity, yet it occurred to me that the natural effort had long been exerted in vain to accomplish what the ipecacuanha directly effected—that of completely emptying the stomach. I remained with my patient an hour, and left her somewhat better. After I had gone she turned herself on her left side, and remained so still for several hours as to alarm her husband, who sent for me directly, fearing she was dying. I found her pulse much improved; she was still lying on her left side; the sickness had abated. A little plain gruel was given, and a half pint injection, with equal parts of milk and gruel, was administered every four hours. A slight vomiting came on after this time, but did not continue; her appetite improved so much that there was a difficulty in restraining her from taking improper food, such as beef-steak, &c. Her stomach was disordered twice during her recovery from this cause, so as to require two emetics of ipecacuanha, which were given with advantage. The patient fully recovered, and is now in her usual health.

I was impressed in the above case, not only with the great value of ipecacuanha, but also from the benefit arising from the glysters, in conveying nourishment to the system when in anæmated state, and when food could not be received or retained in the stomach; indeed, I have often thought, from the great absorbent power of the colon, that glysters might supersede the necessity of transfusion, having this advantage—the perfect safety and facility of the operation.—*London Lancet, June* 28, 1845.

## ON IODIDE OF POTASSIUM AND IODINE.

The physiological effects of Iodide of Potassium have been accurately observed by M. Ricord. The skin is very susceptible of the action of this salt, and persons under its influence frequently exhibit eruptions on the face and shoulders or even all over the body. The digestive function is frequently improved by its use, the appetite increases, and the patient gains flesh. It however, frequently produces gastralgia, which may sometimes be mistaken for pleurodynia, but there is no diminution of the appetite, nor is that induced. The iodide frequently gives rise to ptyalism similar to that seen in pregnant women. The mucous membranes are not inflamed, the salivary glands are not swollen nor is the breath fetid as in mercurial salivation. The quantity is almost always increased under the influence of the action of this salt. The circulation is not sensibly influenced, but it predisposes to attacks of hæmorrhage, and a species of ophthalmia is often induced. Coryza frequently comes on, but the mucous secretion from the nose has no tendency to pass into a purulent state. This coryza is sometimes attended with intense cephalalgia, and comes on in some cases after very small doses of the salt. It is sometimes replaced by a peculiar bronchitis with a slight cough. Its effects are not often developed on the nervous system, bur a slight degree of cerebral excitement, spasmodic cramps and subsultus tendinum have been observed after its use by Mr. Ricord. Slight swellings of the joints have been observed in some cases after the use of iodide of potassium.

The dose of this salt administered by Mr. Ricord in constitutional syphilis is generally about a gramme and a half (22 grains) in the course of 24 hours. It seldom requires to be given in large doses, but where the symptoms indicate an increase, the dose may be increased to six grammes (one drachm and a half) in the twenty-four hours. Mr. Lisfranc has also used the iodide of potassium, in constitutional syphilis: he begins with the dose of a gramme (fifteen grains) in the twenty-four hours gradually increasing according to the circumstances of the patient. It should however be discontinued as soon as any of its constitutional effects appear. The action of this medicine continues long after it has ceased to be taken, and its use should not be resumed till its therapeutic effect has entirely ceased. The iodide of potassium has also been administered in cases of scrofula with great success, and its effect on the ulcers is not less decided. Mr. Bomage reports most favourably of the action of this salt in chronic rheumatism and even in acute rheumatism, where antiphlogistic remedies have been first employed. Mr. Gearsley of London has employed successfully the iodide in deafness produced by suppurating phlogosis of the mucous membranes of the nose and ears. In these cases it produces the symptoms of an ordinary catarrh which at first increases the deafness, but is afterwards followed by improvement. It does not ordinarily produce its beneficial effects until the catarrhal symptoms are produced and have yielded.

M. Velpeau has employed iodine as an injection in the treatment of dropsy. He first injected the tincture of iodine into the peritoneum of the dog and although a strong tincture killed the animal yet a diluted solution, when injected into the peritoneum produced only a slight inflammation which was attended with adhesion between the intestines and other viscera. At first he used the tincture of iodine in hydrocele, then in encysted and congenital hydrocele, and afterwards in dropsies of the subcataneous bursæ. In all these cases he met with the greatest success. Introduced through a puncture into shut sacs, the tincture of iodine, diluted with water, almost invariably produced adhesion of the opposite parietes of the cavity which it touched: when introduced into the cellular tissue it does not produce gangrene. M. Velpeau has also used this remedy in certain cases of *goitre*, when the tumour contains a transparent or opaque liquid substance. Six cases were thus successfully treated by M. Velpeau. The same treatment has been extended by Velpeau to cases of hydrarthrosis which had resisted other modes of treatment and with decided success. M. Velpeau asks the question if we may not hope that certain varieties of spina bifida, of hydropericardium, of hydrothorax, and ascites will yield to this mode of treatment.—*Medical Times Pharmaceutical Number, Aug.* 1844.

# CHEMISTRY, MATERIA MEDICA AND PHARMACY.

## PRESTAT'S ADHESIVE PLASTER.

The following composition is said never to crack, and not to inflame the skin;—Empl. diachyl, gum, 400 grains; purified rosin, 50 grains; tereb. venet., 38 grains, are mixed together at a gentle heat, and then 12 grains of gum mastich and 12 grains of gum ammoniac incorporated, and the mass spread on linen. In winter it is advisable to add 10 grains more turpentine, and 12 grs. ol. amygdal.—*Journ. für. Prakt. Chem.—Amer. Journ. of Dental Science.*—June 1845.

## A NEW METHOD OF DETECTING THE ADULTERATION OF ESSENTIAL OILS.

The sophistication of the different essential oils with oil of turpentine occurs daily in commerce, and no process capable of discovering the fraud with certainty is known; the odour and the various chemical tests have hitherto been insufficient. The essential oils of marjoram, lavender, spikenard, sage, thyme, rosemary, wormwood, and peppermint, are the most subject to this adulteration.

In 1838, M. Mero discovered a method of detecting the presence of oil of turpentine, founded on the circumstance that this oil dissolves the fixed oils with great facility, while the essential oils above mentioned do not. He considered, therefore, that it might serve to indicate the presence of oil of turpentine mixed with pure essential oils, whose powerful smell conceals that of the turpentine.

After a great number of experiments, he found that the oil of poppies deserved the preference, because it always possesses the same consistence. It gave the most accurate results in the detection of the presence of oil of turpentine, in small proportions, in the above-mentioned essential oils.

About three grms. of oil of poppies are poured into a graduated tube, and an equal quantity of the essential oil to be tested added; the mixture is then shaked, and should become of a milky white, if the essential oil is pure, whilst it remains transparent if it contain any oil of turpentine.

The value of this process may readily be ascertained, by first testing a pure essential oil, and then some essential oil of turpentine; if the essential oil is then mixed with the oil of turpentine, even in proportions so small that no advantage could accrue to traders in mixing it, it is found to behave like the essential oil of turpentine itself—that is to say, the mixture is not rendered turbid.

To make this experiment successfully, the mixture of the two essential oils should be very intimate. The method employed in commerce for the purpose is this:—The pure essential oil, and the quantity of oil of turpentine which is to be added to it, are placed in a hot water-bath basin, and this is heated until the mixture, which is at first turbid, becomes transparent.

The mixture which is obtained by adding oil of turpentine in the process of distilling the plants, is detected in the same manner.

It is to be regretted that the process of M. Mero cannot be applied in a general manner. It will not detect the es-

sential oil of turpentine in the essential oils of thyme and of rosemary. However, it furnishes the means of recognising the adulteration of several of the essential oils most in use.

The Society for the Encouragement of Industry has voted a medal to *M. Mero*. In some experiments before the committee, he proved that he could determine at once the mixtures which contain 5 per cent. of oil of turpentine, and was, moreover, able to tell very nearly the proportions of the mixtures.—*Journal de Pharmacie.*

## ON THE CHANGES IN THE URINE EFFECTED BY DISEASE, AND THE TESTS TO DISTINGUISH THEM.

By E. J. Shearman, M. D., Member of the Royal College of Physicians of London, &c.

(*Read at the Sheffield Medical Society, March* 20, 1845.)

Before it is possible to ascertain the effect of disease upon the secretion of urine, it is necessary to become acquainted with the nature of healthy urine; and this will be best understood by studying the changes which the food undergoes in omnivorous animals, from its introduction into the stomach, to its excretion from the body in the different forms of respiration, perspiration, urine, and fæces. In concisely drawing your attention to this subject, it will be impossible to overlook the manner in which animal heat is kept up.

Our aliment is composed of carbon, nitrogen, hydrogen, and oxygen, with small quantities of soda, lime, potash, magnesia and iron, together forming animal and vegetable albumen, fibrine, and casein. After mixing with the animal secretions of the mouth and stomach, it is called chyme; the bile unites with it in the duodenum, from whence it proceeds into the small intestines, where it becomes chyle and excrement; the chyle is taken by the lacteals and receptaculum chyli into the thoracic duct; then into the right side of the heart, where it mixes with the venous blood. In the right side of the heart we have, then, the proteine of the venous blood, (consisting of albumen, fibrine, and casein,) with an additional quantity of these three substances added; together with the salts, converted by the hydrochloric acid of the gastric juice (derived from common salt) into hydrochlorates; and the red globules of the blood, which contain the carbonate of the protoxide of iron. There is an *excess of carbon* in our food. The venous blood is now conveyed by the pulmonary artery into the lungs, surcharged with this carbon, a combustion of part of which takes place with the oxygen of the atmosphere, and is respired in the form of carbonic acid gas, the rest being carried by the arteries to form fat and bile. Another portion of oxygen combines with some of the hydrogen, and is respired in the form of watery vapour. The carbonate of protoxide of iron of the red globules of the blood unites with another portion of oxygen and hydrogen, and is converted into hydrated peroxide of iron. This chemical decomposition disengages caloric, and thus accounts for the animal heat of the lungs. The blood is now called arterial, is conveyed into the left side of the heart, from thence to the arteries, and from thence to the capillaries, in which vessels the hydrated peroxide of iron of the red globules of the blood gives off its oxygen to the carbon and hydrogen of the metamorphosed or decayed tissues which they meet with in the capillaries, forming carbonic acid and water, and are reconverted into carbonate of protoxide of iron, thus disengaging a sufficient quantity of caloric to keep up the animal heat all over the body; the animal fibrine and albumen (or, if you please, the proteine of the blood,) replacing those parts of the decayed tissues which require it, by the vital force; and the nitrogen, hydrogen, and carbon of the decayed tissues filling up the vacuum in the capillaries caused by that organism. The blood now again becomes venous. It is charged with carbon, hydrogen, and nitrogen, from the decayed tissues, and a great portion of it goes, by the vena portæ, to the liver, from which is secreted the carbon and soda, which forms the bile; the nitrogen being conveyed again into the lungs with a fresh supply of albumen, fibrine, &c., from the thoracic duct. The same process goes on again. The renal arteries convey the blood to the kidneys in very large quantities, which secrete from it the extra quantity of nitrogen brought into it by the decayed tissues, in the form of urea and uric acid in the urine.

The above is the theory of Liebig, which easily accounts for animal heat. But since this has been before the scientific world, Professor Mulder, of Utrecht, has produced another very beautiful theory, not depending upon the chemical changes iron is supposed to undergo by Liebig. His theory is, that the iron is in the same state in both venous and arterial blood; that the protein of the blood, when in the capillary vessels of the lungs, combines with oxygen, and is converted into oxy-protein; changing the blood corpuscles of the venous blood from transparent convex bodies into semi-opaque, double-concave lenses, by which means they reflect more light, and make the blood look lighter—arterial blood. This combination of oxygen produces the caloric in the lungs. The blood being then circulated through the arteries, is conveyed into the general capillary system, where this oxygen of the arterial blood-corpuscles is given off to dissolve the old tissue; and the protein supplies its place. The blood-corpuscles lose their concave lens figure, and become again convex and more transparent, and give a darker colour to the blood, becoming again venous. This change of oxygen also gives off caloric sufficient to keep up the animal heat of the whole body.

Which of these theories is correct is not for me to determine; they both account for animal heat very satisfactorly.

We thus see that the kidneys are the organs destined to purify the blood of its decayed nitrogen, as the liver and lungs are of its decayed carbon; and the natural healthy secretion from the kidneys is urea and uric acid, combined with some of the salts which have been introduced into the blood by the food.

Oxygen is absorbed by the skin, combines with some of the hydrogen of the decayed tissues, and forms, water, which is given out, along with the nitrogen gas taken with the food, in the form of perspiration; and the rest of the carbon of the decayed tissues is excreted in the fæces, with the insoluble salts, &c.

It is quite impossible, in a short paper, to enter fully into this very important and interesting subject, but I have endeavoured to bring a few striking facts together, in order to induce some of you, more able than myself, to follow up the investigation; and I propose to do so under the four following divisions:—

1. To show what healthy urine is, and how produced.
2. To draw your attention to a number of diseases generally accompanied by a certain abnormal state of the urine.
3. To point out the easiest modes of detecting these diseased conditions.
4. Shortly to recapitulate those parts of the subject most frequently met with in practice

### 1. *Nature of healthy urine, and how produced.*

The kidneys are the organs destined to remove from the system any excess of fluid, any mal-assimilated food, and the whole of the nitrogen, with some carbon of the decayed tissues. The amount of tissue metamorphosed in a given time may always be measured by the quantity of nitrogen in the urine. That condition of the body which is called *health* involves the conception of an equilibrium among all the causes of waste and supply. If the kidneys cease to secrete, the nitrogen and water are then absorbed into the blood, and produce disease of a very serious nature.

Healthy urine, then, consists of water impregnated with urea and uric acid *always*; often with hippuric acid, phosphate of soda and ammonia, magnesia, potash, and chloride of sodium; sometimes with sulphates; the mucus of the bladder and debris of epithelium, with the colouring matter.

Urea and uric acid are composed of carbon, hydrogen, nitrogen and oxygen, and are formed by the re-arrangement of the atoms of water, nitrogen, and carbon, sent to the kidneys by the renal arteries.

In a healthy adult, from thirty to forty ounces of acid urine are secreted in twenty-four hours, of the specific gravity of 1 020 or thereabouts, containing about eight grains of uric acid, 255 grains of urea, 138 of fixed salts, and 160 of organic matters; and is of a pale amber colour, owing to a substance called hæmaphacin.

Urine passed soon after drinking water (urina potus) is about 1.005; secreted soon after a hearty meal (urina chyli,) 1.025; after a night's rest, (urina sanguinis,) 1 020. To be quite sure of the gravity, these three specimens should be mixed. Urine always contains more water, and is lighter after drinking freely of water; and contains less, and is heavier, after copious perspiration and in hot weather.

In order to ascertain the quantity of solid matter in urine of any specific gravity, Dr. Christison has invented a table, by which you see, in a moment, the solid contents in 1000 grains of urine, first finding the specific gravity. And if you save the whole urine of a patient for twenty-four hours, weigh it, and take the specific gravity, you have then, by a simple rule of proportion, without further trouble, the whole solid contents in twenty-four hours.

The urine of carnivorous animals is acid, but the urine of herbivorous animals is alkaline. The natural state of the human urine is acid, but becomes alkaline by living entirely on vegetable food.

Urine, left to itself, is converted into a solution of carbonate of ammonia. The carbon of the urea combines with the oxygen of the water, and is converted into carbonic acid; the nitrogen combines with the hydrogen of the water, and is converted into ammonia.

2. *Certain diseases accompanied by abnormal condition of urine.*

Excessive indulgence in animal food, with too little bodily exercise, dyspepsia, and want of perspiration, are always attended by increase in the quantity of uric acid and urates.

Uric acid is frequently produced in great quantity in the bladder, by the hydrochloric aid formed in the stomach from disease of that organ; which, being absorbed into the blood, and secreted by the kidneys, forms hydrochlorate of amonia, and deposits the uric acid.

In fever, and all diseases accompanied by rapid emaciation, the urine is of a high specific gravity, a dark brown-red colour from excess of urea, uric acid, urate of ammonia, and sometimes blood and purpurine. The lateritious sediment is urate of ammonia. And in extreme cases of acute rheumatism and hypertrophy of the heart, very large quantities of uric acid and urate of ammonia are commonly found.

In all acute diseases attended by great emaciation, inflammation, or disorganization, with unhealthy digestive organs, as long as the kidneys remain healthy, uric acid is secreted in abundance; but if the kidnies become diseased, as in morbus Brightii, diabetes, &c., then the secretion from the kidneys is perverted; part of the nitrogen remaining in the circulation, and the carbon, hydrogen, and oxygen, assuming the forms of albumen, sugar, hippuric and oxalic acids, &c. In diabetes mellitus, when starch, sugar, &c., do not undergo the changes required to be converted into carbon or fat, the starch is converted into grape-sugar by oxygen, and the sugar is excreted by the kidneys.

In gout and rheumatism, urate of soda is found both in the urine and deposited in the joints and sheaths of the tendons.

When pressure on the renal veins exists to such an extent as to prevent the return of blood to the cavæ, as from a tumour, pregnancy, or diseased viscera, the elements of the blood are often poured out by the kidneys; and, on examination, we find albumen, blood-discs, and the colouring matter of the blood, (hæmatosine.) And in granular disease of the kidneys, and anasarca after acute disease of the skin—as scarlatina and extensive burns—albumen in large quantities is detected; but when the kidneys and skin regain their natural functions, uric acid and urea are again secreted in the place of albumen.

In all diseases of an anæmic or chlorotic nature, attended by languid circulation and extreme debility, independent of acute disease, a deficiency of urea and uric acid is found, and no deposit takes place unless there is a very small secretion of urine. In hysteria, there is a large flow of limpid urine, of low specific gravity, and of a green colour. In chlorosis, the urine is also of a low specific gravity, and green; and this green colour is owing to the mixture of cystine with hæmaphaein.

When the functions of the skin are impaired only, an excess of urea and urate of ammonia is always the result: and if, in this case, profuse perspiration occurs, the fluid goes off by that process instead of the kidneys, the specific gravity of the urine becomes increased, and deposits frequently take place in the bladder in consequence, forming calculi, owing to deficiency of fluid; but, if the skin is inperspirable, then the kidneys carry off the extra quantity of water, and the urine becomes lighter; but the animal acid (lactic or butyric) which ought to go off by the skin, is secreted by the kidnes, and, combining with the ammonia or soda of the urates, produces uric acid.

When the functions of the liver are deranged, carbon is eliminated with hydrogen and cholesterine from the kidneys, which gives the peculiar colour to the urine in all cases of jaundice.

In organic mischief in the liver and spleen, or great congestion of the vena portæ, the urine is very red, purple, or copper-coloured, owing to purpurine and urate of ammonia; but when bile is circulating in the system from disease of the gallducts &c., the urine is very brown, and easily shows bile by the proper tests. In contracted, hobnail, or cirrhosed liver, the extent of the disease may generally be measured by the quantity of purpurine in the urine; and usually in ascities from diseased liver, we find purpurine; but in ascites from peritoneal disease we find none. The purpurine appears to proceed from the altered condition in the portal circulation.

When the liver and lungs are both so diseased as to prevent the proper quantity of carbon being carried off by their functions, hippuric acid is sure to be found in the urine.

In cases where organic mischief exists in the kidneys, the urine is frequently semi solid when cold, and of a dark colour, like a mass of black currant jelly. And when hæmorrhage from some part of the urinary organs takes place, the urine is red, and shows quantities of blood-discs under the microscope. In fungus hæmatodes of the kidney, the urine looks like infusion of roses while warm, and like red currant jelly when cold, taking the form of the vessel.

During the progress of pneumonia, less carbon will be eliminated from the lungs, and therefore more will be in the urine and liver; consequently, hippuric acid is often found. And in confined situations, where animals are obliged to breath impure air, the globules of the blood are not sufficiently supplied with oxygen, carbon cannot be converted into carbonic acid in the lungs, and life could not go on unless the kidneys secreted more nitrogen and carbon in the forms of urate of ammonia and hippuric acid.

In hepatitis, the carbon is converted into bile; and, as long as the other secretions are going on properly, the carbon which ought to form the bile is converted into fat and oil, and is found in the blood and urine.

We often meet with melancholy, highly-nervous, emaciated patients, simulating diabetes mellitus, but even more depressed in spirits, who merely complain of great debility and exhaustion, with some litle pain in the back or lions, for which we find it very difficult to prescribe effectually. Dr. Golding Bird (to whom I am greatly indebted for much of the contents of this paper) has clearly shown that most of these cases are owing to imperfect assimilation in digestion, converting the urea of the nitrogenous part of the food into that state which is secreted by the kidneys, as oxalic acid and ammonia instead of sugar, which, combining with the lime of the phosphates, produces the oxalate of lime diathesis; and it is to the derangement of the stomach, duodenum and liver, that we must look for success in the treatment of these cases. I have met with two patients of this description latterly, whose cases would have puzzled me very much before I read Dr. Bird's paper.

*Alkaline Urine.*—When, from any cause, as the consequence of wear and tear in old age, excess of study, or great excitement of the brain, an injury to the spine, or stone in the bladder, the kidneys or bladder are deprived of their natural supply of nervous power, the elements of urea combine with the elements of water, and are converted into carbonate of ammonia, which, by irritating the mucous membrane, and neutralizing the solvent phosphoric acid, throws down the triple phosphates, and phosphate and carbonate of lime, and renders the urine alkaline. Thus we find, in almost all cases of long-continued calculi in the bladder—let the calculus be composed of what it may—that the urine is strongly alkaline, ammoniacal, and deposits phosphate of lime, which sticks to the bottom of the vessel like birdlime. The fusible calculus is composed of the ammonio-phosphate of magnesia and phosphate of lime.

In persons who are confined to very sedentary habits, with great mental exertion, for a length of time, and then obliged to use violent muscular exercise for a few days, as clergymen with small livings, lawyers, and schoolmasters, alkaline urine, with abundance of earthy phosphates, is usually the consequence; and this unnatural secretion brings on a degree of debility not easily accounted for in any other manner.

In irritative dyspepsia in gouty habits, the urine often contains the phosphates in abundance; and whenever the triple phosphates, with alkaline urine, are deposited for a length of time together, both in the night and morning urine, accompanied by emaciation, there will always be found organic disease, either in the digestive organs, kidneys, or bladder, if not in the spine.

Dr. Golding Bird gives the following rule respecting the phosphates, which will be found very useful in practice:—That where the presence of phosphates is only found in the evening urine, organic disease is rarely the cause of it; but where they are found equally in the morning and evening urine, you may be sure organic disease exists.

In bad cases of typhus fever, the urine is frequently ammoniacal towards the close of the disease, the nervous system of the kidneys being too depressed to secrete urea, and its elements being converted into carbonate of ammonia, just as they would be in common chemical decomposition out of the body.

During retention of urine from diseased prostate gland, stricture of the urethra, or where a catheter is obliged to be worn, the urine is always alkaline, owing to irritation in the mucous membrane.

These observations might be carried to an almost indefinite extent, but enough has been remarked to convince any one of the value of observing the chemical nature of urine in disease. To arrange these cases scientifically, would take up too much time on this occasion.

*To be continued.*

## LIQUID COMPOUND OF IODINE AND MORPHIA.

Mr. Taylor recommends to the notice of the profession, a compound of the above remedial agents. He first forms an aqueos solution of iodine, in accordance with one of Lugol's formulæ, containing iodine ℈i.; hydriod potassa, ℈ij; dissolved in soft water, ℥i. The compound mixture is then prepared as follows, viz.:—Of the above solution, ℥i.; sulphate of morphia, gr. i.; alcohol, ℥iv.; soft water, warm, ℥iij. First dissolve the morphia in the water, then add the alcohol, and lastly the solution of iodine. Dose for a child two years old, 8 to 16 drops, repeated during the day; for an adult, 40 drops. The diseases in which he has used it to best advantage, are chronic dysentery, chronic diarrhœa, mesenteric diseases of children, and scrofulous diseases generally, where there is considerable nervous irritation or looseness of the bowels. In cases of scrofulous diseases, attended with great debility, and an atonic condition of the system, he has combined sulphuric acid with it with benefit.—*Abridged from Boston Medical and Surgical Journal*, July 23.

THE

# British American Journal.

**MONTREAL, AUGUST 15, 1845.**

## MEDICO-CHIRURGICAL SOCIETY.

An extraordinary meeting of this society was held at its rooms on the 21st July last, to adopt measures for co-operating with the sister society of Quebec, and the District societies of Niagara and Toronto, for the organization of a Provincial Medical Association, the principal object of which is the expression of a deliberative voice in the details of a Medical Bill, and other matters affecting the interests of the Profession in this Province.

Dr. A. F. Holmes having been called to the chair, the objects of the meeting having been fully detailed, and the correspondence that had taken place between the secretary (Dr. Badgley) and the other societies in the matter, having been read, the following resolutions were proposed and adopted, which we copy from the local papers, in which they have already appeared as their immediate publicity was imperative.

1st. Moved by Dr. Badgley, seconded by Dr. Crawford.—That delegates be now selected by the Medico-Chirurgical Society of Montreal, to meet those to be named by the Quebec, Toronto, and Niagara District Medical Societies, in this city, on the 20th day of August, to adopt measures for the foundation of a Provincial Medical Association, the formation of by-laws for its governance and the general purposes contemplated, for advancing the interests of the Profession in this Province.

2d. Moved by Dr. Hall, seconded by Dr. Trestler,—That Drs. Crawford, Badgley, Fraser, David and MacDonnell be the delegates from this Society, to meet those to be named by the other Societies, for furthering the objects referred to in the preceding resolution.

3d. Moved by Dr. David, seconded by Dr. Crawford,—That the Secretary be requested to notify the Medical Societies of Quebec, Toronto, and the Niagara Districts, that the Medico-Chirurgical Society of Montreal has elected delegates to meet and confer with those to be named by them respectively, on the 20th day of August next, at Montreal.

4th. Moved by Dr. David, seconded by Dr. Scott.—That the proceedings of this meeting be published in one of the French and one of the English newspapers of this city.

FRANCIS BADGLEY, M.D.,
Sec. of the Med. Chir. Socy., Montreal.

Montreal, July 23, 1845.

All the above resolutions were carried without a dissentient voice, with the exception of the first. Dr. Arnoldi, Jun., proposed an amendment to the effect:—That the Medico-Chirurgical Society of Montreal do call a meeting of the members of the Profession, practising in this District and the Western District of Three Rivers, for the purpose of electing delegates to represent the Profession in these portions of the Province, at the general meeting of delegates proposed to be held on the 20th Inst. No member seconding Dr. Arnoldi's motion, the amendment was not proposed from the chair, and the original motion was carried. Dr. Arnoldi then notified the members present of his determination to have a general meeting of the Profession of the districts summoned at an early day. It appears to us that as this measure has originated with the Medico-Chirurgical Society of this city, and is now approved of and sustained by the sister societies of the Province; as to them, and them only, belongs the credit of the scheme, and as they have already taken the initiative steps for the success of the project, in the actual appointment of delegates to adopt measures *for the formation of the association*, any ulterior measures which might be deemed necessary for its thoroughly successful completion, might with the greatest propriety have been left to them. Should the general meeting above mentioned take place, and a committee, as one of its acts, be nominated, we then fear the supervention of difficulties,—one of which may be, the refusal on the part of the delegates of the societies to meet the delegates of the general meeting, on the ground of a violation of the authority under which they are appointed, as expressed in the first resolution above recorded, which restricts them to a conference

only with the delegates of the *Medical Societies* of the Province. Such a result is by no means improbable, and we regret it the more, as with an object of such importance in view, the greatest unanimity should prevail. We hope however that all elements of discord will yet not only be most carefully avoided, but if raised most determinately put down.

While on the subject of the Medico-Chirurgical Society, we may mention that the society of this city has altered its system of management. A new code of rules, after having undergone the prescribed ordeal, was adopted at a meeting held on the 2nd Instant, and in pursuance of them, the following gentlemen were nominated office-bearers for the ensuing year.

*President*—Dr. Holmes.

*Vice Presidents*—Dr. Crawford and Dr. Badgley.

*Secretary*—Dr. MacDonnell.

*Treasurer*—Dr. Fraser.

*Committee of Management.*

Dr. Arnoldi, jr., Dr. Hall, Dr. Sutherland.

## PROVINCIAL MEDICAL ASSOCIATION.

Since the preceding article was placed in the hands of the publisher, we have noticed that Dr. Arnoldi, jun., persevering in his determination, expressed at the meeting of the Medico-Chirurgical Society, has, after some trouble, *managed* to obtain a list of twenty-one names to a requisition, calling upon Dr. Arnoldi, sen., as *Doyen* of the Profession, to summon a meeting of the Medical Practitioners of "the District and the Western portion of the District of Three Rivers," "for the purpose of organizing a General Association." We subjoin the advertisement from the *Montreal Herald*:—

### ADVERTISEMENT.

### PROVINCIAL MEDICAL ASSOCIATION.

TO DR. DANIEL ARNOLDI:

*Dear Sir,*—

We, the undersigned, Medical Practitioners in the City of Montreal, respectfully request you, as the *Doyen*, to convene a Meeting of the Medical Faculty of this District and also of the Western portion of the District of Three Rivers, to be held on the 19th day of August, at the Court House, at ten o'clock, A.M., for the purpose of co-operating with the Medical Faculty of the District of Quebec and the Eastern portion of the District of Three Rivers, in the measures about to be adopted for the formation of a *Provincial Medical Association.*

And whereas Delegates from the Districts of Toronto, Kingston and Niagara, are expected to meet in this city on the 20th August, to hold a Convention with the Delegates who will be named by the Districts of Quebec, Three Rivers and Montreal, to organize the Provincial Medical Association, we earnestly hope that every Medical Practitioner in this District, will appreciate the importance of the meeting which we desire you to convene, as otherwise they will not be represented at the Convention of Delegates nor in the general proceedings of the Association.

The main objects for forming a Provincial Medical Association is to create a better understanding among all the Members of the Profession; to watch over their general interests; to appeal, when necessary, as one body to the Legislature, for the protection of the privileges and the supplying of the wants of the Profession; to regulate the studies of Pupils and the duties of Practitioners; in short, to provide for all such matters as may elevate the present standard of the Profession and to protect the public from Charlatanic impositions.

We most respectfully subscribe ourselves,

Dear Sir,

Your obedient servants,

| | |
|---|---|
| Wd. Nelson. | J. McGale. |
| J. B. LeBourdais. | C. Carter. |
| B. H. Charlebois. | J. H. Grenier. |
| A. Rowand, M. D. | E. A. Regnault, M.A.P. |
| Horace Nelson, M. D. | P. A. C. Munro. |
| Frs. C. T. Arnoldi, M. D. | A. C. Regnier. |
| L. T. Tavernier. | G. J. Bibaud. |
| J. Emery Coderre. | E. H. Trudel, M. P. |
| W. Sutherland, M. D. | J. B. L. Papineau. |
| W. P. Smith. | J. H. L. Richelieu. |
| P. E. Picault. | |

August 9.

In consequence of, and in conformity with the desire expressed by the Members of the Profession, who have done me the honor to request me to call a Meeting of the Medical Faculty in the whole District of Montreal, and the Western Portion of the District of Three Rivers, for the purposes expressed in their Address. I therefore notify, that a CONVOCATION of the whole of the MEDICAL PRACTITIONERS in the District and portion of the District above mentioned, will be held at the COURT-HOUSE on the 19th day of the present Month of AUGUST, 1845, for the purpose of organizing a GENERAL ASSOCIATION, and good intelligence among the whole Faculty, as likewise to concert measures to maintain their high standing in Society, and to watch over their general interests.

It is to be hoped that every Member of the Profession in the Districts alluded to, who can possibly attend will do so, as interests of vital importance to the Faculty will be discussed.

August 11, 1845. DANL. ARNOLDI.

In the observations which we feel ourselves constrained to make upon the above document, we are compelled to enter upon some explanatory details, which we shall render as brief as may be consistent with our object.

The Medico-Chirurgical Society, of this city, was constituted about two years ago, for the purpose of establishing a more friendly intercourse among the members of the Medical Profession in this city, and for affording opportunities for familiar communication on professional subjects. The announcement of these proceedings excited the profession in Niagara, Toronto and Quebec, to follow the example; and sister societies, for the prosecution of a similar design, were established in the three places alluded to; those of the two former embracing the respective Districts, that of the latter city and of Montreal, being restricted to the cities alone. A desire was shortly afterwards expressed by the Society of this city, for a more general union of the Profession throughout the Province, by the organization of a General Association, to be represented on occasions of assembly, by delegates from the societies already in existence, as well as from any others that might subsequently be formed. We may now observe that a most cordial and ready reception was given to this project by the Societies already named, evincing how highly the prospective advantages which would certainly accompany such an association, if properly conducted, were appreciated.

The objects which were contemplated in the proposed formation of a Provincial Medical Association, are clearly and well enough set forth in the last paragraph of the requisition above placed on record. We were not, however, previously aware, that the regulation "of the duties of Practitioners" was to form any part of the objects of the contemplated association; and we shall wait with no little impatience, the expected *denouement* on this head.

A communication was lately received by the Society in this city from the Medical Society of Quebec, conveying the information, that that Society not only coincided in the views of the Society in this city, but also that it would send delegates to Montreal on the 20th of the current month. This zeal and haste, on the part of the Quebec Society, in appointing so early a day for convention, will, it is much to be feared, render it almost impossible for the Societies in Canada West to avail themselves of the opportunity to be present by their delegates. On an important matter of this nature, we think that full time should have been allowed for the assembly of delegates from the most distant parts of the Province, (if any Medical Societies there existed,) and that the meeting, by being so much the more numerous, which would have been the sure result of its postponement to a more distant day, would have carried far more influence with it.

But why was this assembly of delegates from the Medical Societies of the Province to meet? This is readily answered by a reference to the first of the resolutions of the Medico-Chirurgical Society of this city, which will be found in another column, and in which their duties are thus stated: "*To adopt measures for the foundation of a Provincial Medical Association, the formation of bye-laws for its government, and the general purposes contemplated for advancing the interest of the profession in this Province.*" The meeting called for the 20th inst., can be viewed in no other light, than a conference of the *different Medical Societies* by their delegates, for the purpose of *founding* the association; themselves constituting as it were, the nucleus around which the profession generally may rally, after the establishment of certain regulations which may be brought to bear upon every section of the Province, in which branches may spring up. The means of communication with each other would thus be rendered easy—the business of the Association be managed with facility, and no unusual or unnecessary demands would be made upon the time of individual members of the profession, by an occasional protracted absence from the scene of their labours to attend meetings, it might be at distant places. Dr. Arnoldi's amendment, noticed in the preceding article, that the *Medico-Chirurgical Society* should summon a meeting of the profession of the Districts alluded to, was not entertained by the Society, on the ground, not only of such a procedure being a departure from its already determined plan of action, but because being a city Society, it did not conceive that its *position* warranted any such authoritative pretensions, and it would have savoured less of factious opposition, had Dr. A. not pushed his determination to extremes.

Without entering into any minute critical examination of the requisition, for there is ample material for such a task, did our inclination at the present moment tend to it, one thing cannot but arrest the attention of even a superficial observer, viz., that proceeding beyond the District of Montreal, the summons to the meeting is made to extend to the profession of the Western portion of the District of Three Rivers, while that of the Eastern Townships is excluded. Could not the decanate voice, so powerful as to reach one distant section of this Province, in contiguity with this District, reach another equally as distant? What the barrier which has presented its impenetrable walls to the "*important*" invitation? Why the ban thus laid upon our brethren of the Eastern Townships? Let those who have signed the requisition reply, for they *only* can.

We object not to a general meeting of the Profession, for any purpose whatever for which it may be called, but we do think that this one was perfectly unnecessary for the present; we view it as a most decided interference with the plans and projects of the Medical Societies of the Province, and regarding it as a most likely method of engendering feelings of animosity where none should exist, we must condemn it. We regard it as a highly injudicious and ill-timed measure.

## TITLES TO THE ARTICLES OF CORRESPONDENTS.

The following is from our esteemed contemporary the *Boston Medical and Surgical Journal*. The suggestion is a good one, and we earnestly recommend it to the particular attention of our correspondents, for we have already, on several occasions, experienced considerable difficulty on this subject:—

Were authors of original essays, and correspondents of the Journal generally, always particular to give a title to their communications, they would confer a special favor. It is essential that every paper worth reading, should be made come-at-a-ble by an index. Without some appropriate caption, expressive of the main character of an article, an editor sometimes finds himself perplexed—especially when he ascertains that one cannot be constructed without the risk of disapproval on the part of the author. Each volume is provided with a tolerably minute index, without which there would be utter confusion, and it is important that each article should be there appropriately placed. Being persuaded that we sometimes fall short of the expectations of the writers of really excellent papers, in affixing a name, we shall esteem it a favor if each one will remember to christen his own, both to save himself from vexation, and us from the liability of blunders or mistakes.

## REPORT OF THE MONTREAL GENERAL HOSPITAL FOR JULY.

DISEASES AND ACCIDENTS.

| | | | |
|---|---|---|---|
| Ascites, | 2 | | 108 |
| Amaurosis, | 1 | Gastrodyna, | 1 |
| Anasarca, | 1 | Hemiplegia, | 1 |
| Apoplexy, | 1 | Hernia, | 1 |
| Bronchitis, | 3 | Hysteria, | 1 |
| Bubo, | 1 | Mania, | 2 |
| Cholera, | 1 | Morbus Brightii, | 1 |
| Chorea, | 1 | Neuralgia, | 1 |
| Concussio, | 1 | Ophthalmia, | 2 |
| Contusio, | 7 | Orchitis, | 1 |
| Colica, | 2 | Paralysis, | 1 |
| Constipatio, | 1 | Phthisis, | 2 |
| Delirium Tremens, | 6 | Pleuritis, | 3 |
| Diarrhœa, | 16 | Pyrosis, | 1 |
| Dislocatio, | 1 | Rheumatismus, | 14 |
| Dysenteria, | 2 | Scarlatina | 1 |
| Dyspepsia, | 6 | Synovitis, | 1 |
| Erysipelas, | 3 | Syphilis, | 9 |
| Febris Com. Con. | 36 | Ulcus, | 8 |
| —— Typhus, | 11 | Variola, | 2 |
| —— Intermit, | 2 | Vulnus, | 1 |
| Fractura, | 2 | | |
| Gonorrhœa, | 1 | Total, | 162 |
| | 108 | | |

Dr. Bruneau, Dr. Hall, } Attending Medical Officers.

NUMBER OF PATIENTS TREATED DURING THE MONTH OF JULY.

| | | | |
|---|---|---|---|
| Remained, | 103 | Discharged, Cured, | 165 |
| Admitted, | 162 | Died, | 6 |
| | | Remaining, | 94 |
| Total treated, | 265 | Total, | 265 |

| IN-DOOR PATIENTS TREATED. | | OUT-DOOR PATIENTS TREATED. | |
|---|---|---|---|
| Belonging to Montreal, | 161 | Belonging to Montreal, | 216 |
| Immigrants, | 80 | Immigrants, | 75 |
| Seamen, | 24 | Seamen, | 2 |
| Total, | 265 | Total, | 293 |
| Males, | 144 | Males, | 146 |
| Females, | 121 | Females, | 157 |
| Total, | 265 | Total, | 293 |

Alexander Long, M. D., *House Surgeon.*

## MONTHLY RETURN OF SICK IN THE MARINE AND EMIGRANT HOSPITAL, QUEBEC, FROM THE 1st TO THE 31st JUNE, 1845.

DISEASES AND INFIRMITIES.

| | | | |
|---|---|---|---|
| Febris,* | 57 | Dislocatio | 1 |
| Pneumonia | 6 | Abscessus | 10 |
| Catarrhus | 2 | Ulcus | 17 |
| Dyspepsia | 3 | Vulnus* | 20 |
| Rheumatismust | 47 | Contusio | 24 |
| Diarrhœa | 24 | Subluxatio | 8 |
| Ophthalmia | 2 | Ustio | 3 |
| Variola‡ | 5 | Concus, Cerebri | 3 |
| Herpes | 6 | Necrosis† | 1 |
| Erysipelas | 3 | Phlegmon | 5 |
| Hemiplegia | 2 | Paronychia | 1 |
| Delirium Tremens | 1 | Amaurosis | 1 |
| Hydrops§ | 3 | Menorrhagia | 1 |
| Orchitis | 4 | Amenorrhœa | 1 |
| Syphilis‖ | 47 | Parturitio | 2 |
| Fractura¶ | 22 | Amputatio† | 5 |
| Strictura Urethr | 2 | Morbi Alien | 22 |
| | | Total | 361 |

NUMBER OF PATIENTS TREATED DURING THE MONTH OF JUNE.

| | | | |
|---|---|---|---|
| Remained | 122 | Discharged | 329 |
| Since admitted | 361 | Died | 7 |
| | | Remaining | 147 |
| Total | 483 | | |

*Of these several were cases of Typhus with disposition to bowels or chest affection; four cases of Scarlatina; two of Intermittent fever.

†Generally chronic; a few cases admitted under the acute form.

‡ Imported; one fatal case.

§ One case of Hydro-thorax, one of Hydrocele, one of Œdema of the lower extremities.

‖ Several cases with secondary symptoms of the worst character; some complicated with phagedenic ulcers.

¶ Three cases of fracture of the cranium; seven of the thigh, of which one was compound; four of the arm; two of the neck of the scapula; one of the acromion process; two of the leg; one of the ilium: one of the metacarpal bones, and one of the ribs, all doing well.

* Of these one was of the left lung. The man was stabbed through that organ with a *Jack-knife*, which seems to have penetrated as far as the handle. Great hemorrhage at the time in consequence of the wound of one of the thoracic arteries. The man has been discharged cured.

† Of a great portion of the Lower Maxillary with the loss of five teeth.

‡ Trifling and less than usual: the amputations were, three of the fingers, two of these from the metacarpal bones; one of the great toe from the middle of the metatarsal bone in consequence of diseased interarticular cartilages, and the amputation of right toes on one individual in consequence of frost-bite.

Out Patients 121.

J. E. J. Landry.
*House Surgeon.*

## MONTREAL MEDICAL BOARD.

The following gentlemen obtained their licences to practice, at the quarterly meeting of the Medical Board of this district, adjourned from the 5th Inst.

As Physicians and Surgeons, Pierre Fortin, M.D.; John A. Sturgeon, M.D.

As Apothecary, Chemist and Druggist, Richard William Rexford.

## BOOKS, &c. RECEIVED DURING THE MONTH.

Experiments on Febrile Caloricity, (Post Mortem Fever,) by Bennet Dowler, M. D., New Orleans.

The Boston Medical and Surgical Journal—regularly.

The Buffalo Medical and Surgical Journal.

The Philadelphia Medical Examiner. August No.

The Southern Medical and Surgical Journal. August No.

The St. Louis Medical and Surgical Journal.

The American Journal of Dental Science (Baltimore). June.

Annual Announcement of the Medical Department of the University of the State of New York, 1845-6.

Circular of the Medical Faculty of Harvard University, 1845.

Annual Announcement of Jefferson Medical College, 1845.

Annual Announcement of the Philadelphia School of Anatomy.

Wiley & Putnam's Literary News-Letter. August, 1845.

## NOTICE TO CORRESPONDENTS.

*Letters have been received since our last issue, with enclosures from* Dr. Cartier, (Vaudreuil), Dr. Hope, (Belleville), Dr. Johnstone, (Sherbrooke), Dr. Burritt, (Smith's Falls), Dr. Newell (Durham.)

*The Journal will be forwarded to* Dr. Greniere, (Lotbiniere), Dr. M'Mahon, (St. Rose), Dr. Cartier, (Beauharnois), Dr. Noel, (St. Antoine). Dr. Mewburn, (Danby House, Queenston), *will perceive that his request is complied with.*

*We are indebted to* Dr. Grasset *for the interesting papers read before the Medico-Chirurgical Society of Toronto. They will receive early attention.* Dr. Spier, (Toronto), *has our thanks for the valuable packet transmitted.*

*We are again compelled, unwillingly, to postpone several communications.* Dr. Bowie's *report will, however, certainly receive insertion in the next number; and so also will* Dr. Johnston's *very important case of poisoning by Tincture of Opium in an infant.*

## MONTHLY METEOROLOGICAL REGISTER AT MONTREAL.—July, 1845.

| Date. | Thermometer. | | | | Barometer. | | | | Winds. | | | Weather. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 7 A.M. | 3 P.M. | 10 P.M. | Mean. | 7 A.M. | 3 P.M. | 10 P.M. | Mean. | 7 A.M. | Noon. | 6 P.M. | 7 A.M. | 3 P.M. | 10 P.M. |
| 1, | +58 | +70 | +57 | 64 | 30.00 | 29.96 | 29.87 | 29.94 | S.E. by E. | S.E. by E. | S.E. by E. | Fair | Fair | Fair |
| 2, | " 59 | " 77 | " 64 | 68 | 29.75 | 29.75 | 29.76 | 29.75 | S. S. E | S. | S. | Rain | Fair | Rain |
| 3, | " 63 | " 72 | " 58 | 67 5 | 29.77 | 29.78 | 29.80 | 29.78 | S. W. | W. by S. | W. by S. | Fair | Fair | Fair |
| 4, | " 60 | " 74 | " 60 | 67 | 29.84 | 29.86 | 29.89 | 29.86 | W. | W. | W. by N. | Fair | Sh' wrs | Cloudy |
| 5, | " 64 | " 85 | " 67 | 74.5 | 29.93 | 29.92 | 29.90 | 29.92 | W. by S. | W. by S. | W. by S. | Fair | Fair | Fair |
| 6, | " 68 | " 82 | " 72 | 75 | 29.94 | 29.90 | 29.90 | 29.91 | W. by S. | W. S. W. | W. S. W. | Fair | Fair | Fair |
| 7, | " 71 | " 80 | " 71 | 75.5 | 29.83 | 29.83 | 29.82 | 29.83 | W. by N. | W. by N. | W. by N. | Shower | Fair | Fair |
| 8, | " 70 | " 85 | " 62 | 77.5 | 29.84 | 29.87 | 29.93 | 29.88 | W. | W. | N. W. | Fair | Fair | Fair |
| 9, | " 60 | " 80 | " 64 | 70 | 30.07 | 30.07 | 30.05 | 30.06 | N. W. | N. W. | W. by N. | Fair | Fair | Fair |
| 10, | " 65 | " 84 | " 70 | 74.5 | 30.13 | 29.98 | 29.90 | 30.00 | W. | W. | N. W. | Fair | Fair | Fair |
| 11, | " 73 | " 92 | " 75 | 82.5 | 29.89 | 29.87 | 29.84 | 29.87 | W. by S. | W. by S. | W. | Fair | Fair | Fair |
| 12, | " 78 | " 82 | " 57 | 80 | 29.78 | 29.70 | 29 67 | 29.72 | N. W. | N. W. | N. E. | Fair | Rain | Thun. |
| 13, | " 62 | " 76 | " 60 | 69 | 29.75 | 29.70 | 29.66 | 29.70 | N. E. | N. E. | N. E. | Fair | Fair | Rain |
| 14, | " 60 | " 84 | " 65 | 72 | 29.70 | 29.70 | 29.69 | 29.67 | N. | N. | N | R. & T. | Fair | Thun. |
| 15, | " 70 | " 86 | " 71 | 78 | 29.69 | 29.73 | 29.80 | 29.74 | N.W.byN. | N. W. | N. W. | Fair | Fair | Fair |
| 16, | " 72 | " 96 | " 80 | 84 | 29.85 | 29.79 | 29.70 | 29.78 | N. W. | S.W. by S. | S.W. by S. | Fair | Fair | Fair |
| 17, | " 79 | " 86 | " 72 | 82.5 | 29.63 | 29.61 | 29.68 | 29.63 | S.W. by S. | S.W. by S. | S. W. | Fair | Rain | Fair |
| 18, | " 67 | " 74 | " 59 | 70.5 | 29.89 | 29.94 | 30.04 | 29.99 | W. | W. N. W. | N.W.byW | Fair | Fair | Fair |
| 19, | " 59 | " 72 | " 62 | 65.5 | 30.13 | 30.11 | 30.08 | 30.11 | W. N. W. | W. by N. | W. by N. | Fair | Fair | Fair |
| 20, | " 64 | " 77 | " 66 | 70.5 | 29.94 | 29.78 | 29.73 | 29.82 | S.W.byW. | S. W. | S. W. | Fair | Rain | Rain |
| 21, | " 68 | " 86 | " 76 | 77 | 29.78 | 29.73 | 29.62 | 29.71 | S.W.byW. | S.W.byW. | S.W.byW. | Fair | Fair | Thun. |
| 22, | " 73 | " 71 | " 65 | 72 | 29.58 | 29.61 | 29.67 | 29.62 | N. W. | N. W. | N. W. | R. & T. | Fair | Cloudy |
| 23, | " 58 | " 76 | " 56 | 67 | 29.76 | 29.79 | 29.85 | 29.80 | N. W. | N. W. | N. W. | Rain | Fair | Fair |
| 24, | " 54 | " 71 | " 58 | 62.5 | 29.87 | 29.85 | 29.84 | 29.85 | N. W. | N. W. | N. W. | Fair | Fair | Fair |
| 25, | " 57 | " 76 | " 60 | 66.5 | 29.80 | 29.80 | 29.78 | 29.78 | N. W. | N.W.byW | N.W.byW | Rain | Rain | Cloudy |
| 26, | " 64 | " 79 | " 65 | 71.5 | 29.77 | 29.75 | 29.72 | 29.75 | W. | W. | W. | Fair | Fair | Cloudy |
| 27, | " 63 | " 79 | " 63 | 71 | 29.70 | 29.66 | 29.64 | 29.67 | N. W. | N.W.byN. | N.W.byN. | Fair | Fair | R. & T, |
| 28, | " 62 | " 76 | " 59 | 69 | 29.61 | 29.63 | 29.67 | 29.64 | N. | N. | N. | Fair | Rain | Fair |
| 29, | " 60 | " 74 | " 61 | 67 | 29.68 | 29.65 | 29.59 | 29.64 | N. | N. | N. N. W. | Cloudy | Rain | Rain |
| 30, | " 58 | " 75 | " 62 | 66 5 | 29.50 | 29.57 | 29.69 | 29.59 | N.W.byN. | N.W.byN. | N. W. | Rain | Fair | Fair |
| 31, | " 60 | " 73 | " 63 | 66.5 | 29.76 | 29.88 | 29.96 | 29.87 | N. W. | N. W. | N. W. | Rain | Fair | Fair |

Thermometer, { Maximum Temperature, 96° on the 16th; Minimum " 54° " 24th; Mean of the Month, 71° 8'

Barometer, { Maximum, 30.13 Inches on the 10th & 19th; Minimum, 29.50 " " 30th; Mean of Month, 29.803 Inches.

## OBSERVATIONS METEOROLOGIQUES POUR LA HAUTE VILLE DE QUEBEC,—Juin, 1845.

| Jours. | Thermomètre. | | | Baromètre à 60° F | | | Vents. | | | Etat du Ciel. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6h.A.M. | MIDI. | 6h.P.M. | 6h.A.M. | MIDI. | 6h.P.M. | 6h. A.M. | MIDI. | 6h. P.M. | 6h.A.M. | MIDI. | 6th P.M. |
| 1 | 65 | 75 | 75 | 30,072 | 29,971 | 29,870 | S O | S O | S O | beau | beau | beau |
| 2 | 61,75 | 81 | 78 | 29,893 | 29,838 | 29,826 | S O | S O | S O | nuages | beau | couvert |
| 3 | 74 | 89 | 83 | 29,894 | 29,815 | 29,979 | S O | S O | S O | beau | beau | beau |
| 4 | 72 | 83 | 79 | 29,811 | 29,805 | 29,760 | S O | S O | S O | beau | beau | beau |
| 5 | 63 | | 55,5 | 29,663 | | 29,723 | N E | | N O | beau | | nuages |
| 6 | 56 | 59 | | 29,807 | 29,765 | | S O | N O | | beau | quelq. nuages | |
| 7 | 59 | 67 | 65,5 | 29,991 | 29,956 | 29,774 | S O | S O | S O | beau | nuages | beau |
| 8 | 55 | 73 | 75 | 29,857 | 29,768 | 29,559 | S O | S O | S O | couvert | couvert | beau |
| 9 | 73 | 83 | 79 | 29,540 | 29,519 | 29,529 | S O | S O | S O | nuages | nuages | nuages |
| 10 | 72 | 79 | 76 | 29,798 | 29,806 | 29,781 | S O | S O | S O | beau | nuages | quelq. nuages |
| 11 | | 67 | 64,5 | | 29,828 | 29,783 | | N E | N E | | nuages | beau |
| 12 | 52,5 | | 56 | 29,777 | | 29,463 | N E | | N E | couvert | | pluie |
| 13 | 65 | 76 | 69,5 | 29,430 | 29,451 | 29,571 | S O | S O | S O | couvert | quelq. nuages | nuages |
| 14 | 60 | 61,5 | 58 | 29,680 | 29,727 | 29,723 | N | N E | S O | couvert | pluie | nuages |
| 15 | 63 | | 64 | 30,007 | | 29,940 | S O | S O | S O | nuages | nuages | couvert |
| 16 | 52 | 60 | 63 | 29,757 | 29,776 | 29,766 | N E | N E | S O | pluie | couvert | couvert |
| 17 | 54,5 | 61 | 55 | 29,649 | 29,616 | 29,728 | S O | S O | S O | pluie | nuages | nuages |
| 18 | 66 | 69,5 | 66,5 | 29,975 | 29,973 | 29,948 | S O | S O | S O | beau | nuages | beau |
| 19 | 58 | | 69 | 30,015 | | 29,988 | S O | S O | S O | nuages. | | beau |
| 20 | 62 | 78,5 | 74 | 29,007 | 29,906 | 29,747 | S O | S O | S O | nuages | couvert | nuages |
| 21 | 58 | 67 | 62 | 29,608 | 29,744 | 29,754 | N E | N O | S O | couvert | quelq. nuages | nuages |
| 22 | 57 | 68 | 66 | 29,856 | 29,800 | 29,716 | S O | S O | S O | beau | nuages | beau |
| 23 | 58,5 | 78,5 | 69 | 29,679 | 29,592 | 29,543 | S O | S O | S O | nuages | couvert | beau |
| 24 | 63,75 | 72 | 65,5 | 29,523 | 29,461 | 29,482 | S O | S O | S O | nuages | nuages | beau |
| 25 | 50,5 | 64 | 58 | 29,675 | 29,627 | 29,697 | S O | N O | S O | couvert | couvert | nuages |
| 26 | 61 | 68 | 67,5 | 29,727 | 29,678 | 29,658 | S O | N O | N O | beau | nuages | nuages |
| 27 | 59 | 61 | 61,5 | 29,715 | 29,776 | 29,763 | N O | N O | N O | couvert | nuages | quelq. nuages |
| 28 | 50 | 63,5 | 62 | 29,791 | 29,756 | 29,760 | N O | S O | N E | nuages | nuages | nuages |
| 29 | 60,5 | 62 | 60,5 | 29,904 | 29,898 | 29,943 | N E | N E | N E | nuages | nuages | couvert |
| 30 | 61,5 | 66 | 60 | 30,089 | 30,011 | 29,961 | N E | N E | N E | beau | nuages | nuages |