New-York, July 5, 1832.

Sir,

In presenting the accompanying Report, we beg leave to return our warmest thanks to Drs. Stephenson, Holmes, Beaubien, Vallé, Robertson, Messrs. H. Gates, R. Armour, of Montreal; and to Drs. Morrin, Lyons, Tessier, Hall and Fargues, of Quebec, for the kind manner with which we were received, and for the means placed at our disposition to investigate the Epidemic prevailing in the Canadas. Such was the uniform attention and endeavour to promote the objects of our mission, that we have thought it necessary to make it the subject of a separate communication.

We are respectfully,

J. R. RHINELANDER,
J. E. DE KAY.

To

The President of the Board of Health
of New-York.

REPORT

OF THE

COMMISSIONERS

EMPLOYED TO

INVESTIGATE THE ORIGIN AND NATURE

OF THE

EPIDEMIC CHOLERA

OF

CANADA.

PUBLISHED BY ORDER OF THE BOARD OF HEALTH.

JULY 31, 1832.

NEW-YORK,
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1832.

REPORT.

TO THE

BOARD OF HEALTH

OF NEW-YORK.

July 5, 1832.

In presenting the following Report, we think proper to premise that we have travelled over more than one thousand miles, in the space of two weeks, resting two days at Montreal, and two at Quebec; suffering under the influence of the epidemic; our days and nights spent in hospitals, dissecting rooms, in conversation with physicians, or oppressed with the fatigue of travelling: we have had no time, positively, to arrange our materials, much less to present a connected view of the disease. The public anxiety, however, to have a report is so great, that we have determined to submit one in its present shape.

In pursuance of instructions from the Common Council, to enquire into the origin and nature of the disease now prevailing in Canada, under the name of Epidemic Cholera, we left New-York on the 18th June, accompanied by Drs. Depeyre and Devan, of this city, both of whom volunteered their services in the handsomest

manner, and to their zeal and activity, we were, in the sequel, much indebted.

On the 19th of June we arrived at Mechanicsville, 18 miles above Albany, where we were informed that a case of Asiatic Cholera had occurred, which terminated fatally, before our arrival. At Fort Miller, 20 miles farther to the north, four other cases had occurred, all terminating fatally. These were all emigrants, and for their history, we refer to our former communications, and to appendix (A.)

On the 20th, we reached Whitehall, where a case of supposed Asiatic Cholera had terminated fatally, five days before our arrival. Much alarm had been excited. The man had been excessively alarmed, and had drank nine glasses of gin previous to death. For a full account of this case, see appendix (B.)

On the same day, we found that three cases of fatal Cholera had occurred at Burlington ; for a full and excellent description of which, and the post mortem appearances, we refer to appendix (C.)

We arrived at St. John's, on the 21st June, where the Cholera was reported to have raged with great violence. Upon conferring with the highly respectable physician of the place, Dr. Buckley, we learned that not more than twenty of the cases which had occured there, could be identified as Epidemic Cholera, and of these, seven had died. His practice was to administer four grains of opium and two grains of calomel every hour, and to bleed immediately. For details, we refer to appendix (D.)

We arrived at Montreal late in the evening of the same day, and on the following morning, called on several physicians, for the purpose of informing ourselves respecting the nature and extent of the disease. Montreal is situated along the banks of the river St. Lawrence, not far from its confluence with the Ottawa. The ground rises from the river side, to a considerable elevation, and then descends, forming a deep ravine, extending to the base of the high hill which overlooks the town. This is known as "the Mountain," and has an elevation of 550 feet. Extensive marshy grounds are to be found along the northern part of the town, in the direction of La Chine. The most virulent cases, and the greatest mortality, occurred along this ravine. It was stated to us, that only one man escaped in this quarter, and he was a butcher. For a sketch of the history and progress of Epidemic Cholera, as it prevailed at Montreal, furnished by Dr. Nelson, we refer to appendix (E.)

As one of the prominent objects of our mission was to ascertain the history of its origin, we proceeded immediately to Quebec, leaving Drs. Depeyre and Devan to pursue their investigations at Montreal; the result of which, will be found in appendix (F.) The separate statement of Dr. Depeyre, with regard to the disease itself, will be found in document (G.) The observations of Dr. Devan, with regard to the prevention of Cholera, may be seen by referring to appendix (H.) The autopsical examinations made by those gentlemen, correspond in every respect, with those made by us at Quebec.

We arrived at that city on the 23d June; with regard to its topography we may state generally, that it presents a broad bold promontory, three hundred and fifty feet high, which extends into the river St. Lawrence, and is bounded on the south by the river St. Charles. Much of this promontory is occupied by the Citadel and other accessary military works. The town itself may be described as consisting of two portions, the upper and lower towns. The upper town contains the military works already alluded to, a part of the city proper included within the walls, the elevated suburbs of St. Louis and a portion of the suburbs of St. John. The lower town consists of St. Roch's suburb lying near the confluence of St. Charles and St. Lawrence Rivers, and of all the streets lying near the water's edge between the cliffs and the river. The St. Lawrence is fresh, not only at Quebec but for a hundred miles below.

When the Cholera first appeared here, it was among the inhabitants of the lower town that the first cases and the greatest mortality occurred. For a history of the state of the atmosphere at Quebec for three months preceeding and during the epidemic, we refer to appendix (I;) and for a statement of the mortality at the same place to appendices (K) and (L.)

In obtaining the history of the disease, our first object was to ascertain facts. We therefore sent our circular (see appendix M) to the most prominent members of the Medical profession, but from the pressure of business few answers could be obtained at the moment, though we are in daily expectation of receiving them. Through Dr. Skey, Inspector General of Hospitals, and Dr. Tessier, Health Officer, we found that the Medical Staff at Quebec were divided, respecting the origin of the disease. Dr. Morrin, Health Commissioner, Dr. Skey, Inspector General, and Dr. Lyons, Superintendent of Emigrant Hospitals, believed the disease

imported and under some circumstances contagious. But Dr. Tessier, Health Officer, and Dr. Hall, resident physician, believed it was neither imported nor contagious. Our own opinion coincides with those of the last named gentlemen. We could find no proof that any man sick with the Cholera was landed at Quebec, and upon a reference to the report of the Quebec Board of Health, such will be found to have been the case.—(see appendix N.) The physicians who sign that document all agree ; they say " the undersigned have not as yet been able to discern that any case of Cholera had been landed from any vessel in the harbor, before, nor until several days after its first appearance in the city." Some physicians thought that the Transit and Carricks (emigrant vessels) introduced the disease. Cases of Cholera did exist, it was ascertained, while at sea ; but no case had occured for a month previous to their arrival at Quebec, and these ships were passed as perfectly healthy at the Quarantine at Grosse Isle, 36 miles below Quebec. When they arrived in the city, there was no sick man on board, nor was a man landed sick from any vessel, until some days after the disease had made its appearance in Quebec, and the first person attacked was not an emigrant, but a native. It may be worthy of remark, that up to the time of our leaving Quebec, no case of Cholera had made its appearance at Grosse Isle, where passengers were daily landed.

At Montreal it appeared about the same time ; a sick man was landed from the steam boat Voyageur in the evening, and the following morning Cholera had made its appearance in three different sections of the city. It was supposed that this vessel brought the disease into Montreal, but it was ascertained that when the steam boat left Quebec, no disease existed at the latter place. The number of emigrants on board this boat was nine hundred, and in consequence of the great number, two hundred were landed about nine miles above Quebec, and the remainder arrived at Montreal. The following is an extract from the Exchange Journal, furnished us by R. Armour, Esq., Editor of the Montreal Gazette.

" *Sunday, June* 10.—The Voyageur arrived yesterday evening, brought up 37 cabin and 550 steerage passengers. She had left Quebec Thursday evening, but was obliged to return and land about 200 passengers, from the danger of having too many on board.

" A case of Cholera has been reported to have occurred on board the Voyageur, but there are no grounds for the rumour.

The patient was sick by consumption, long illness, was subject to the gravel, and not accustomed to fatigue. When he embarked, he was sufficiently well to pay for his passage, he took ill and died, either before arrival here, or shortly after. The widow attributes his death to fatigue and anxiety about getting his things on board. He was not in indigent circumstances. The only symptoms approaching to those of Cholera, were a slight vomiting and some cramps in the feet before death. The patient is reported to have taken a very large quantity of cold water during his illness."

(The man's name was Kerr, an emigrant from near Belfast. Before he expired, another of the Voyageur's passengers, named Makee, from Cork, was seized with similar symptoms, and in twenty-four hours expired. Dr. Hubertson assured us on Sunday, that is was undoubted Cholera; and its existence was stated in a note from the Health Commissioner to the President of the Board of Health.

The Cholera was announced in the Quebec papers of the 9th as having occurred on the 8th at that place.

The Montreal Board officially announced the existence of Cholera in a bulletin issued the 13th. Cases 71, Deaths 23. The mortality of the disease in this city will be found fully detailed in appendix (O.)

Nearly a month previous to this date, Dr. Wm. Robertson stated to us, that he was called to a case which he would have termed Asiatic Cholera, had that disease then prevailed as an epidemic at Montreal.

The following may be briefly stated as the conclusions to which we have arrived, and we are borne out in them by the papers annexed to this report.

1. The disease which we saw in Canada is essentially the same with that which has extended over Asia and Europe, and which is known under the various names of Cholera Asphyxia, Spasmodic, Malignant, Epidemic, and Asiatic Cholera.

2. The disease has not been imported, but has originated in Canada under circumstances favorable to its developement and increase.

3. These circumstances are to be found in the crowded state of the vessels, the sudden change of diet in the 50,000 emigrants annually landed at Quebec, exposure to fatigue, to a burning sun, or to night air, the want of requisite clothing, nourishing food and chiefly to habits of intemperance.

3. The disease always first attacked and carried off, almost to a man, the grossly intemperate.

4. Particular districts seemed exposed peculiarly to the invasion of Cholera, while others escaped in an unaccountable manner. We have already alluded to the comparative mortality of the upper and lower towns of Quebec, and to the ravine in the rear of Montreal. We may also refer to the instances of Grosse Isle and Trois Rivieres, as cases of exemption.

5. Previous to the appearance of Cholera as an epidemic, in every place we visited, cases would occur, which the physicians would pronounce to be aggravated cases of common Cholera. Those who had previously seen the Asiastic Cholera would pronounce decidedly their opinion of its identity with that disease; disputes would arise, and it was only when the disease appeared as an epidemic, that medical opinions became unanimous.

6. We were unable to ascertain whether any particular profession, trade or occupation gave any peculiar exemption from the disease. It is however in evidence, that the English soldiers in garrison were not so frequently attacked as others; and when attacked, the mortality was much less than among the civilians. This may however be imputed to various circumstances; for although these soldiers were exposed to many of the exciting causes of the disease, yet they were well clothed and fed, and when taken ill were immediately attended to: something too, perhaps, may be attributed to their regular habits, and to the imdiate recourse to bleeding.

7. Women and children were less subject to the attacks of this disease, although they were far from being exempt. It was chiefly among the poorer classes of females, whose business necessarily led them to exposure and fatigue, that cholera made its appearance.

8 From what has been previously stated, it will appear why the first cases were nearly all fatal. The exhausted and impoverished condition of the patient, the indecision of physicians, the various and contradictory opinions about the nature of the disease, and the tremendous train of symptoms which seemed for a time to baffle all medicines, were enough of themselves to swell the number of fatal cases. But to our apprehension, much of the mortality might have been diminished, had previous arrangements been made for the reception and treatment of the disease.

9. We have reason to believe that many persons among the wealthier classes brought on an attack of cholera, by the imprudent use of purgatives. Fear, as one of the depressing passions, without doubt contributed a great share to the invasion of the disease among this class.

10. Many cases of cholera were distinctly to be attributed to the use of fruits and raw vegetables, and to the drinking of cold or iced water when the body was heated.

11. The various curative means employed in Canada, are alluded to in detail in the appendices attached to this Report.

12. No system of quarantine, devised by the ingenuity of man, or kept up by the selfishness of fear, has succeeded in arresting the progress of this disease. We would however recommend the purification of ships, and more especially by cleansing the persons and baggage of persons who may appear to be deficient in habits of personal cleanliness. The streets, alleys, cess pools and privies should be well saturated with lime, and the bodies of all persons who die of this disease, to be interred with as much expedition as propriety will admit. This latter recommendation has been found to be attended with great benefit, as it diminishes much of the fear with which a house or a neighborhood is regarded, when one or more fatal cases have occurred there.

With these brief remarks we conclude, trusting that the circumstances under which this Report is drawn up, and to which we have already alluded, will explain its conciseness, and apologize for its delay.

J. E. DE KAY,
J. R. RHINELANDER.

July 5, 1832.

APPENDIX.

(A.)

Tuesday, 19th June, 1832.

Dr. Tibbets was called on Monday, 18th inst. at 5 P. M. to attend a man lying in a small building on the edge of the Canal. The man was of a spare habit of body, about five feet ten inches high, and about fifty years of age. He left Montreal on the 11th, and had walked from Whitehall to this town, a distance of about fifty miles; arriving at the latter place on the afternoon of the 17th inst. On that night, which was the night immediately preceding the invasion of the disease, he slept in a small unventilated shed, about thirteen feet square, with six or seven other emigrants. As regards his general habits, they were irregular; indulging himself in liquor, at the same time depriving himself of proper food. On the 17th, he was seen with a whiskey bottle in his pocket, and his daughter stated, that he would sometimes drink, but that he did not take much. She also stated, that he had had no warm food since the 15th inst.; but had subsisted on gingerbread up to the time of the disease. She also stated, that he arrived in the country on the 16th of May last.

When the doctor saw the man, he found him lying on the floor, exhibiting the following symptoms—"skin livid, appearing like that of a plucked wild pigeon, nails blue, skin cold to the hand, but warm to the sense of the patient himself, the pulse was gone, nausea incessant, though there was no vomiting, except once, and that was caused by irritation of the fauces with the finger, diaphoresis profuse, indeed so much so, as to wet all his bed clothes, great precordial distress, anxiety of countenance, inanimate in his motions, suppression of urine, watery alvine discharges, eye sunken, suffused and lustreless, mental powers perfect, thirst great, no bilious discharges, but what there were, were involuntary, and accompanied with little pain, occasionally there was much agitation, and the body exhaled a peculiar odour.

"*Treatment.*—Hot cordials, as brandy, peppermint water, &c.; blankets were wrapped about him. A large dose of calomel and opium was administered, and venœsection was attempted, but with little success, as not more than ℥i was obtained. Notwithstanding all the means employed, no warmth could be established.

"*Tuesday Morning, 19th inst.* 6 *A. M.*—The tongue, which was before moist and furred, now became dry and chopped. The perspiration had become less copious, but was cold and clammy. The spasms of the lower extremities, now in a measure, subsided, but those of the abdomen continued. The articulation remained the same through the whole course of the disease, not being above a whisper. The respiration became more laborious, and continued to increase, until death. At 9 A. M. the patient died; the disease being just eighteen hours in its duration."

The doctor thinks that he would have considered this to have been a case of *Common Cholera, had he not known that the Asiatic Cholera was then in the country.* The patient's daughter stated, in addition, that her father had been subject to cramps in the lower extremities, and that this attack invaded, in a manner, which led her to suppose, that it was only a recurrence of the usual cramps.—*No sectio cadaveris.*

Cases by Dr. Fitch, of Fort Miller.

Tuesday, 19th June, 1832.

Dr. Fitch was called four or five days since, to see three patients, aged fifty-four, fifty-seven, and fifty-nine years. They had arrived at Montreal in the Redwing, and while at sea, endured many hardships, and were put on an allowance of a pint of water per diem.

They all died from eighteen to thirty-six hours after the incursion of the disease. In one case, the discharges were bilious, in two others they were white. The doctor does not think they were Asiatic Cholera. Persons had free communication with the patients while sick, and no symptoms of Cholera or any other disease, have yet been developed.

Fort Ann, Wednesday, 20th June, 1832.

We learned from Doctors Pater and Edward, whom we accidentally met on the road, that they had been called a few days ago, to a case in the neighbourhood, which resembled Cholera, but

which they said was not the true Asiatic. The patient was a man of very intemperate habits, and had been subject to those "turns," and was very frequently "cramped," and when seized, he stated that "it felt like one of his old attacks."—he died.

(B.)

Whitehall, Wednesday, June 20, 1832.

The following is a statement of a case which occurred here, extracted from one of the journals: it is a letter

From Capt. Lathrop, dated on board Steamboat Phœnix, Lake Champlain, June 15, *(Friday.)*

A Mr. Larned, of Troy, died on board my boat this day, about 11 o'clock, while lying at Whitehall, and I succeeded in burying him at half past 12, on the island north of the dock, without the assistance of any person from the town, save Doct. Wright, who was truly attentive, and acted the part of a philanthrophist: had he declined giving assistance, as others did, I must alone have been physician, nurse, and sexton. A council of magistrates at Whitehall, pronounced the case to be Asiatic Cholera, in its most alarming aspect. The streets were consequently deserted, and many of the passengers destined to the Canadas, returned in the packets. The particulars of this case are as follows:—

On Monday, Mr. L. had a cabin passage to St. John's, on his way to Quebec. On Thursday, I found him at St. John's, with several others, that left Montreal, so great was the excitement caused by the cholera. He at first took passage to Burlington, wishing, as he said, to go by land to avoid the cholera. He had great fears of the complaint, and talked of it constantly, and carried a phial of preventive. He was a man apparently of dissipated habits, and drank to excess on board the boat.—At Burlington, he concluded to go on to Whitehall; and at about 1 o'clock this morning, was taken with great pain, violent cramping spasms, slight vomiting and purging, also bleeding at the nose. He continued to get worse, and before we arrived at Whitehall, which was at 7, his extremities were quite cold. The passengers thought, and said his sickness was caused by excessive drinking. Dr. W. was at once called, and did not leave him at all. He applied warm rubbing, and gave him medicine to assuage the pain; but all to no effect. Doctors Wright and McLeod pronounced him past all aid, when they first saw him. He died at 11.

The following are the further particulars of this case, as far as could be ascertained :—

This man came on board Thursday, 1 P. M. having left Montreal, Wednesday.—He was not only intemperate in his habits, but was excessively overcome by his fears.—He was also formerly subject to cramps and vomiting: and sometimes he threw even blood up from his stomach.—Vomiting ceased about one hour after he was seized with the complaint of which he died; and he had but one stool after 4 A. M.—He had spasms of extremities, loins and sides, and had drank "nine glasses of gin," before Dr. McLeod saw him.

When we saw him, which was about 8 A. M. the doctor administered tinct. opii. ℥ss.

There was not then much thirst—there was no blueness, but a bleached state of the skin—a peculiar anxious expression of countenance—eyes open, though not observing—pulse perceptible, though irregular—great dyspnœa—excessive debility—pain chiefly confined to stomach and bowels.

In addition to tr. opii. he employed friction, and other external stimuli.

The doctor stated he was in doubt, whether he should call it Asiatic Cholera. Cases very similar, had occurred in this quarter several years before; and was he not aware that the Asiatic Cholera existed in Montreal, he would not have any idea that it might be that disease. He also stated, that the diseases of that section of the country were very malignant, and liable to terminate suddenly. And indeed, Whitehall is flanked nearly on all sides, by a low marshy soil, where a very large mass of organic matter is exposed to the direct influence of the sun, affording every facility to the production of a very virulent miasma.

(C.)

Burlington, (Vt.) 21st June, 1832.

GENTLEMEN,

In compliance with your request, I now proceed to draw up an account of the history of three cases of fatal disease which have recently occurred in this town, and which are supposed to have been cases of Epidemic Cholera; but as this account is contradictory of the reports issued by our Board of Health, in the

number of cases included, it becomes necessary for me to premise the following statement of the grounds on which those reports were made.

Our Board was organized on Saturday the 16th instant—there was then much excitement in town. On Saturday evening, an Irishman by the name of Barlow, a noted drunkard, who had been drunk all the week, was found in an out-house, almost lifeless. It was supposed by the Physician who was called in, that he was intoxicated, (which was probably true.) On Sunday morning, the attending physician found him pulseless, cold, covered with clammy sweat, cramps, sighing, livid, in the possession of his senses &c. and evidently in a hopeless state. While the physician was in the house, his attention was called by Mrs. Harrigan, to a little girl of three years of age, who had complained of being sick early in the morning, and had passed worms. At that time the child did not appear to be in any immediate danger. About 9 o'clock, A. M. (Sunday,) the Board of Physicians were assembled at the house. [Then I saw these patients for the first time: what follows, is from my own observation.] The man (Barlow) was then in possession of his senses, but presented a truly appalling combination of symptoms—his skin livid, cold—bathed in clammy sweat—(to the touch like a reptile,) extremities as if parboiled—pulseless, except in the carotid and femoral arteries—respiration slow—deep sighing—countenance like that of a drowned man, with this important exception, viz.—instead of the prominent eyes and general bloated appearance, the eyes were sunken and the other features contracted.

The child was evidently *in articulo mortis*—livid—pulseless, (except in carotids, and *perhaps* femorals,)—cold—eyes open, sunken, looking *straight forward*, absolutely insensible to light and to the touch. At intervals she raised the trunk, resting on her head and feet, like one in tetanus, and uttering at the same moment a shriek, indicative of intense suffering. This child remained cold, livid, &c. and died before 10 o'clock, A. M.; not over five hours after the attack.

These bodies were both examined about two hours after death. Circumstances, which need not be detailed here, (and to which I now regret that we yielded,) induced us to get through with the examination of the child as soon as possible. Nothing was done, therefore, except to lay open the abdomen and thorax. Every thing appearing well in the thorax, on a superficial view, our at-

tention was confined to the abdomen, where we found the small intestine and stomach of a pink colour throughout. (I say pink, because that word answers my purpose better than any other within my reach.) Eight volvuli were found in the small intestine, from one to three inches in extent; the involved portion being closely contracted in many places. Several large worms (lumbrici,) were found in this intestine. (N. B. No volvulus in the ileocolic region.) The other contents of this intestine were not examined minutely. A fluid like rice water was in the stomach, with something that looked like macerated bread. A similar fluid was found in the small intestine.

The great intestine had its natural colour—cœcum and inferior part of right colon distended with gas—transverse arch, inferior part of the sigmoid flexure and rectum very much contracted. The liver and spleen looked natural externally—gall bladder full. Here the examination ended.

On laying open the abdomen of the man, the viscera were all found in their proper relative positions. They were *intensely hot* to the feel, (we had no thermometer.) So *pungent* was this heat, that I was led to dip my hands in cold water several times, while handling the intestines. The pink colour was deeper than in the other case, and extended over the stomach and intestines and their appendages, as well as over the whole abdominal parietes —not seen on the surface of the liver or spleen. The colour was deepest on the inferior part of the small intestine—less distinct on large intestine. A slight contraction of the small intestine was seen in two or three places. Caput coli distended with flatus—transverse arch, sigmoid flexure and rectum closely contracted.

Every part of the alimentary canal was filled (not distended) with a fluid like rice-water, or more like whey. (This patient drank whey, but the quantity he took would account for but a small fraction of all the fluid contents of his alimentary canal.) This fluid had a sour and very unpleasant odour, (nauseous) it was, in short, the very odour which proceeds from the vomit of a drunken man. The small intestine was covered on its peritoneal surface, with a sort of *size* which accummulated on my hands to such a degree that I was obliged to wash it off repeatedly. When two folds of the intestine were brought together, and then gradually separated, this sizy coating was drawn out in fine filaments, two or three inches long. The same size was found on the peritoneal surface of the walls of the abdomen.

When the small intestine was held between the fingers, it felt as if nearly filled with worms; but on cutting into it, we found that this feeling was produced by the folds of the mucous membrane, (valvula conniventes) which were much extended in all directions, and covered by a cream-like substance, which had a considerable degree of firmness till it was scraped off, then the mass, removed from the surface of the intestine, had about the consistence of cream. This cream-like coating was found in all parts of the gastro intestinal mucous surface, except where the adventitious membrane, spoken of below, was found.

The mucous surface of the stomach duodenum, and superior part of the jejunum was lined by an adventitious membrane, so strong, that pieces half an inch wide and one inch long, could be easily stripped off. With very little pains, this membrane might unquestionably have been taken off *entire*, from the whole surface of the stomach. When scraped with the scalpel, the sound produced, was much like that produced by scraping an articular cartilage. The oesophagus showed no traces of diseased action. The liver was large, light colored, (a drunkard's liver,) apparently almost bloodless, except in the great veins. Gall bladder, full, (not much distended) and not one drop of bile could be forced into the intestine. No appearance of bile in the intestines. No tinge of bile in any of the neighboring parts.

Spleen, natural. (This organ is so various in different individuals, in size, and in appearance, that I do not pretend to know its natural state.

Bladder closely contracted, (as is usual in post mort. examinations)

In the thorax, nothing remarkable was noticed, except that the heart was absolutely bloodless in all its cavities. The lungs were so extensively adherent to the ribs, (old adhesions) that but a small part of their surface could be seen. In attempting to break up these adhesions, the lungs were much torn, and no further examination of them was made.

Brain perfectly natural—spinal marrow not examined.

In this case, as in the other, we did not go into the examination with the minuteness necessary to satisfy some of the most interesting inquiries; but in this case, we were absolutely prevented doing as we would have done, could we have controlled circumstances.

With the facts now stated for our guide, we were called upon by the Board of Health, to say whether these were or were

not cases of Cholera. Some of the physicians present were decidedly of the opinion, that the report should be Cholera—others thought we were not justified in making such a report; and since no middle ground could be taken, they moved for the report as you find it. (See report for Sunday evening, 17th June.)

It was urged in favor of the report, that, from the circumstances of the case, we were in danger of seeing Cholera where it did not exist—that we were bound to look on these cases as we should have looked on them, had no fear of Cholera existed in this region—that, with this in view, we could find, in the history of the man's life, reason enough why he should die of an acute disease of the alimentary canal:—that, in the case of the child, there was evidence of incipient gastro entertis, complicated with intro susception of the small intestines—that the whole assemblage of symptons was indicative, before death, of intro susception.

It was urged against the report, that the assemblage of symptoms, in both cases, indicated cholera; and that the violence of the symptoms, especially in the child, was inexplicable, except on the hypothesis of cholera. Then the co-existence of two cases presenting such appalling symptoms, was urged against the report.

The great force of these objections was admitted, and it was stated, by one who advocated the report, that the symptoms and appearances, did, in truth, excite strong suspicions, that these cases were nothing less than cholera—that should another case occur in the same house, presenting similar phenomena, such evidence would be retrospective in its application, and would unquestionably induce all who advocated the report, to review their decision and change their opinions. It was urged, that in deciding on these cases, we could not avoid putting at stake, our professional reputations, to some extent, decide as we might.

The gentlemen who opposed the report, finally consented to allow it to be adopted without amendment.

This statement, as you perceive, includes all that I have to say in relation to two of three cases—you will form your own opinion of the nature of those cases. On the next page, you will find the account, (historical) of all the cases suspected to be cholera, &c. Some facts already stated, will be repeated. An account of the post mortem examination of the third case is appended,

On Wednesday the 13th of June, an Irish family arrived from Montreal, and took lodgings in the upper story of a house in Water-street. In this house, were then five families, (including the one just arrived.) The rooms on the lower floor were basement rooms, and were in a filthy condition. A child of about eight years of age, belonging to this family, died on Friday, the 15th instant. No physician was called in. One of the town officers having heard that a death had taken place in the family of an emigrant recently imported, went to the house on Friday, (before the burial) with a view of ascertaining, if possible, the nature of the disease. He found some of the inhabitants of the house apparently indisposed to communicate any knowledge they might have had in relation to the subject and they referred him to the mother of the child. She stated that the child "was taken sick on board the vessel, and was sick with a bowel complaint." This was all the information received. On Saturday morning, this family left the house, and went east. The mother was sick when they reached Montpelier, (forty miles from Burlington) which was on Sunday, at about 5 P. M. She died there that evening, of cholera, according to the report of the Board of Health of Montpelier.

While this family were tenants in this house, a Mr. Barlow, an Irishman, of very intemperate habits, was living with Mr. Harrigan in a room below. Barlow was with Harrigan about one week. We are told that he (Barlow,) was drunk the whole week, and scarcely took food till Saturday, when he ate a little veal. On Saturday, between 5 and 6 o'clock, P. M. he was found in an out-house, and supposed at first to be dead. [N. B. It was evident that he had begun to adjust his clothes, with the intention of using the stool; but it is supposed he failed in accomplishing his purpose.] He died on Sunday at 1 o'clock, P. M. nineteen hours after he was found in the out-house.

A child of Harrigan, aged three years, slept in the same room with Barlow, on a bed *contiguous* to his, on Saturday night. This child was seized at five o'clock on Sunday morning, and died at ten o'clock—five hours after the attack.

On Monday, at four o'clock in the morning, Mrs. McFarlane, an Irish woman, of very intemperate habits, but who had been sober for several days, an inmate in Harrigan's family, was seized, and died at nine o'clock, P. M. seventeen hours after the attack.

Here then we have four cases of death in one house, in rapid succession. Of the symptoms presented by the patient first named, we know nothing. The other three presented the symptoms of the prevailing Epidemic Cholera.

Some of the Symptoms, with appearances post mortem, in the case of Mrs. McFarlan.

Symptom 1st—Coldness. The skin, when I first saw this patient, viz. 8 o'clock, A. M. was cold, covered with clammy sweat, &c. As soon as it could be prepard, about noon, she was put into a *hot air bath*, and frictions with dry hot cloths were faithfully applied—at the same time laudanum and ammonia were administered, and a galvanic battery of sixty plates was brought to act, first from right hand to left foot, then from right to left hand. The bath was at 80 deg. Farenheit; the action of the battery kept up about twenty minutes. She grew much warmer —her abomen, and all the inferior extremities, except the feet, soon reached the natural temperature, and did not fall so low as at first, till after death. It was distinctly noticed that the temperature was not constant for any considerable length of time in the afternoon; for example—the left arm and the neck was now icy cold and in a few minutes quite warm; then cold again. About 6 P. M. for the space of a quarter of an hour, the whole of the right side was warm, the left side cold. No difference in external circumstances existed, to account for this discrepancy. At 6½ P. M. all parts, except the left arm and the neck, felt warm. A thermometer left in the right axilla for ten minutes, stood at 99 deg. Farenheit; still, although the body felt *warm*, it felt *cold*. There was a sort of contradiction in the sensation, which I have no language to express—all I can say, is, that although the skin felt warm, it seemed to be covered by a cold slime—there was the feeling as if of a fish or a frog. This body was examined two and a half hours after death, and then the temperature was not so low as it was at 9 A. M.—lower than in the body of Barlow.

2d. Lividity—in all respects as detailed in the case of Barlow. The lips and nails retained most of this livid appearance after it had decreased to its minimum.

3d. Pulse. I could find no pulse in this patient, except in the carotid and femoral (ext. iliac,) arteries, from the time I first saw her, till about 6 P. M.; then I did think, for a few minutes, that I felt some slight pulsation in the radial artery. I opened a vein

in the arm, twice; once about 10 A. M., and again at 6 P. M., not expecting to get blood. A few drachms were drawn, guttatim—it was black, *en masse*, of a rich purple or violet colour when spread on a white earthen vessel, and coagulated, but imperfectly.

4th. Respiration slow and deep throughout—with sighing.

5th. Sensibility.—Patient was much less sensible to the stimulus of the battery, than I was, and I am less affected by it, than most individuals.

6th. Vomiting and Purging, &c.—Vomited and purged early in the morning, a fluid like rice-water, (this comparison is certainly very expressive of the appearance of the evacuations,) having a sour nauseous odour, identical with the odour of the contents of Barlow's stomach About 11 o'clock she vomited twice the same sort of fluid, but mixed with substances just swallowed. After vomiting, she complained of nausea for a few minutes. No stool after I saw her. She said she had passed urine in the bed once, about noon.

7th. She complained of *heat*, and of feeling "*weak*," and of *cramp*, chiefly in the calves of her legs; but repeatedly said she did not feel much distressed. Frictions relieved the "cramp," for the time. There were no very active spasms after I saw her. She complained of heat when her body was coldest; and full as much before being put into the hot-air-bath, as after. For the last eight hours she was disposed to sleep—slept naturally, except that her respiration was slow and deep. About 6 P. M. her sleep seemed more like coma. She became insensible at 8, and died at 9 P. M.

Examination. I was dermined to make as minute an examination as possible, and was sorry to be obliged to do it by candle light—certain parts were removed and examined in the morning. We commenced at $11\frac{1}{2}$ o'clock, two hours and a half Post Mort.

Appearance of Body externally.—Eyes a little rolled up, sunken—pupil not much dilated—countenance livid, but not so much so as soon after the attack. Limbs livid, firmly contracted. Abdomen warm, (not so warm as Barlow's,) moderately distended.

Internally.—All the organs in place. Whole alimentary canal (except œsophagus) full, not much distended. Some slight contractions in two or three places in small intestine. Transverse arch. Sigmoid flexure and rectum closely contracted. Colour *pink*, like Barlow's, but not to the same degree. No change in

colour of œsophagus. This pink colour not visible in the mucous coat, till the cream-like coating was removed. Throughout the stomach and intestines were scattered small linear patches, highly injected, the texture of which was *loose*. (I cannot describe this appearance—it is not uncommon, however.) These patches were largest, most abundant, and most highly coloured in those parts, where the external surface looked most healthy, so far as colour is concerned, viz.—in the transverse arch and left lumbar colon. In the rectum and also in the bladder, (which were subsequently examined by day light, with the aid of a lens,) an appearance was presented, corresponding very well with the plate and description of Follicular Inflammation, given by Dr. Horner. (See Path. Anat.) In the stomach beside the fluid spoken of in the case of Barlow, we found food absolutely undigested. The whole canal was filled with fluid, such as has been spoken of. Nothing like feces, nothing like undigested food was found in any part of the intestines. The caput coli was distended with gas, having the odour of sulphureted hydrogen, but in all the rest of the canal we found the same sour, nauseous odour, before alluded to.

The valvulæ conniventes, as in Barlow; the same white coating, or mucous surface. But in this case, the cream-like substance lined the whole canal, from cardia to anus—there was no membrane on any part of the mucous surface.

Liver, light coloured, enlarged, like Barlow's—gall bladder full, duct closed, as if spasmodically, just at its entrance into the duodenum. It required some considerable force applied to the probe, to overcome this contraction. After the probe was passed, we could force bile into the intestine, but not before. No traces of bile in any part of intestines; no tinge on any of the neighbouring parts. Pancreas, kidneys, spleen, all natural.

Thorax.—Lungs *black* all over. This blackness so often seen in spots on the lungs, was in this case, extended over the whole surface. In other respects, the lungs appeared perfectly healthy. No change in the colour of the mucous membrane of the trachea was noticeable, but on examination by day light, of the small divisions, I thought the colour was too high—nothing remarkable. Heart empty.

Pelvis.—Bladder like the intestines in colour—no coating on its mucous surface.

Nothing remarkable about Uterus or Vagina. One Ovary was highly injected.

Brain perfectly natural. When I began, I fully intended to open the spinal column, but by this time it was after two o'clock, and I was too much fatigued with the labours of the day and night to dare to proceed any further.

The Ganglia of the Sympathetic System in the Thorax and Abdomen, were carefully examined at the time. The Solar Plexus, with all the parts about it, was removed and examined by day light, with the aid of a leus. I do not know the exact degree of redness which belongs to this part in the healthy human subject, nor can it be known, except by examining bodies of men killed by violence; but from what I know of it in brutes, I am decidedly of opinion that no remarkable change had taken place. The inside of the large arteries and veins was carefully examined, and nothing discovered.

I collected a quantity of the cream-like substance and found it perfectly soluble in Aqua Ammonia, but strongly coagulated by Nitric Acid. After being dissolved in Ammonia, by the addition of Nitric Acid in excess, it was again coagulated, and assumed a beautiful lilac colour.

I have given a detailed account, and many parts of it will hardly pay you for the reading, but it is possible that you may find some coincidences between the facts here detailed, and others collected in Canada and elsewhere, which may give to the most trivial matters a certain degree of interest. This consideration is the ground of my excuse for going so much into the detail of these cases. I shall add a P. S. containing more definite accounts of the first symptoms and of the treatment, if I can get the facts (from the gentlemen who saw the patients first,) in season. I ought not to conceal from you, that the President of our Board, a gentleman of extensive practice, and who has spent nearly forty years in practice, thinks these cases were not Cholera in any shape; with this exception, I speak the opinion of the Physicians of this Board, in pronouncing them all three cases of Cholera. But if we are to take the names of diseases according to their etymological import, I should sooner say any thing almost, than Cholera. What I mean is, that these cases were, unquestionably, specimens of the worst form of that prevailing Empidemic called Cholera. Of one thing I am certain, viz: I have never seen disease presenting so formidable an array of symptoms before.

Most respectfully yours,

BEN. LINCOLN, M. D.

Addenda. I learn that Barlow had no purging, and vomited but once or twice. Mrs. Mc. Farlan vomited and purged freely in the morning, for a short time. The child vomited freely at first, and "went out," as the mother says, twice, whether she passed anything but some worms, does not appear. Calomel and Opium was administered to all at first. Brandy and water and wine whey, to Barlow and the woman.

N. B. I did not consider the contraction of transverse arch, sigmoid flexure and rectum, as the result of any morbid action. We often see these parts contracted, especially when there are no fecal matters present.

Quere.—Was the sizy coating or peritoneal surface of intestines, &c. in the case of Barlow, the result of *adhesive* inflamation? or rather would there have been extensive adhesions, had he lived long enough? Was the cream-like coating of the mucous surface, an adventitious membrane in its formative stage?

(D.)

We learned from Dr. Buckley, a very intelligent physician of St. John's, that there had occurred two hundred cases there which passed under the name of Cholera; but that in reality there had been not more than twenty which were fully characterized as Asiatic Cholera, and that of those, only seven died. On our return, which was a week after our first interview with this gentleman, it was ascertained that the total number of deaths by this disease, had been twelve. He does not think the disease at all contagious, but dependent on some atmospheric quality. As one among many proofs, he cited the case of a woman residing about eight or ten miles from the town, who had had no communication with any emigrant, who had not come to the town for a month back, and who was not aware that such a disease prevailed in the neighborhood; she was attacked with the true Asiatic Cholera and died. He was in the habit of administering pul. opii gr. iv, prot. chlor. hydr grij quăqua horă, afterwards increasing the interval and diminishing the dose pro re nată. He always bled and did not even hesitate bleeding, when the pulse was imperceptible; the chief difficulty he found was in getting the blood to flow; he stated that what he got which varied from ʒij to ℥ij was black, "like molasses," and flowed with great difficulty; but that very

frequently, the pulse rose, and animation and heat returned to the system.

(E.)

Section I.—Cholera is endemic in Lower Canada, from the month of June to the end of August. Now and then, before and after the time stated, sporadic cases occur, but always of a mild type. The cases that occur from the end of June to the end of July are generally severe; and, should a thunder shower succeed to a hot day, the cases generally will be as malignant as any of the worst cases of cholera that ever occurred, be the name what it may, Asiatic, or even that of a more remote country, and consequently more imposing. There is one peculiar fact observable in our endemic cholera, namely, the severe cases are never to be found elsewhere than among the poor labouring class. I have known, in former years, persons of the class mentioned, die of cholera, having every mark and symptom of the severest (Asiatic) cholera, in the space of four hours.

Section II.—It is worthy of remark, that every species of disease, for many months past, wore an aspect different from its natural character, and this abberration from the regular type, continued gradually to increase as we approached the coming of summer. Every case of Catarrh, since November onwards, was more lingering; every case of Pleuritis run into the typhoid state; there were no cases of pure interitis, the disease was typhus fever. Small pox was irregular in its periods; during spring and the winter, every case of measles has been irregular, not running its phases with the wonted regularity of that disease. The irruption has come and disappeared alternately for a space of twenty days; now, it simulated scarlatina, now again, roseola; some times, but rarely, uticaria preceded, by three days the more regular disease. We have seen the same case alternate, from one of the before mentioned diseases to another, and finally terminate in Cynanche Maligna; in the same family, at the same time, children of different temperaments, but of the same parents, have been all ill; the disease of one simulating measles, of another mild scarlatina, of a third, the worst species of Cynanche Maligna, but scarcely accompanied by the usual efflorescence of that disease; during the first weeks of April, infantile diarrhœa, a disease of the warm months, was commonly to be met with; about

the middle of April, cholera (a fact unobserved in former years) among the poor broke out and prevailed partially for a period of eight or ten days. Many cases were mild, but some were severe, and one or two were malignant.

Another peculiarity, perhaps not altogether irrelevant, may be here mentioned. Paronychia is an endemic disease in Lower Canada, from the months of April to July, though cases occur sporadically throughout the year. Of this disease, but very few cases have been met with; and of charbon, not half a dozen cases in all.

Such a variation in the natural constitution of man, and a winter remarkable for severity and long duration of the same weather, were the premonitors of what we were doomed to suffer, so soon as the usual period for endemic cholera should arrive.

Section III.—About the first of June, diarrhœa became a common feature in every disease; and about the same time, a few mild cases of cholera sprung up, and one severe case in St. Louis Suburb. As yet there was no alarm, because all was well at Grosse Isle. These were merely the precursors of the storm about to assail us. On Saturday, June 9th, an emigrant passenger, on board the Voyageur steamer was taken ill of cholera, and died landing the same evening. On Sunday morning, another emigrant passenger, from on board the Voyageur also, after an evening of dissipation, was taken with spasmodic cholera, and died the next day. That same night, (Saturday to Sunday) several natives were taken dangerously ill, in Campeau-street, St. Louis-street, Sanguinette street, and St. Catherine street. The persons so attacked were all natives, and had had no intercourse with the port, nor even among themselves. Most of these persons died within twenty four hours. The disease now rapidly and fatally spread, mostly in the remote parts of the suburbs, and first among the natives, gradually encroaching on the town, and towards the decline of the scourge, attacking emigrants in greater numbers than at the first, (most of these emigrants had resided for a year or more in the town.) The disease now seized on the more wealthy population; nor could we perceive any difference in its severity between these and the lower orders.

Few persons below the age of twenty-five, compared with the great number who had passed that period of life, were subject to the disease.

Section IV. Much may be said in favour of the idea, that the disease is contagious, seeing that it has gradually overrun the east, following the route of great rivers, &c. to the most western confines of Europe; but certainly there are many and strong facts against that opinion.—In Montreal, without a shadow of doubt, the disease existed before we had any intercourse with an infected country. [See the Minerve for April .] Several cases broke out in the early part of April; after which the disease disappeared, and again broke out in a mild form about the first of June, (eight days before the arrival of the Voyageur,) in quarters of the suburbs to the east and north of the town, among natives who had little or no intercourse with the port. After being more or less confined to the quarters mentioned, it gradually extended in every direction, but to the town last, and, with the exception of the case on the 10th, to the parts of the town bordering on the port the very last.

The disease, in its rage, after ravaging in a signal manner the poor, extended to all classes, attacking alike those few who had suffered absolute exclusion, and sparing thousands of those constantly exposed to its fury. A few medical men suffered from, and one student died of the disease: but the greater number had been rendered susceptible from over exertion and consequent exhaustion. The clergy, to the number of about thirty persons—unremitting in the zeal of their calling, carrying spiritual succour to all quarters, at all hours, with as much devotedness to the most abject and filthy as to the more wealthy friend,—to a man escaped. Also, the persons in charge of the two cholera hospitals, where were carried the worst cases, the expiring, and many dead,—all escaped. The carters too,—constantly employed to carry the affected to the depôts, and the numerous dead to the cemeteries,—all escaped. Yet it must not be concealed, that where one person died, another case was likely to occur; but this was far from being universal, rather the reverse was the fact.

It would appear as if our usual endemic had been hastened on us; after which it became augmented by the terrific epidemic, similar to itself, which is now gradually blasting the world.

Section V.—Mode of attack. During the first four or five days of the epidemic, the patient was subject for the most part to be attacked in one of the two following modes. First, after a trifling diarrhœa, of several days duration to a few hours only, nausea, quickly followed by vomiting, and an increase, of diarrhœa, would usher him into that stage of the disease

which may be called the second mode of attack. Second, the patient is affected with a slight blueishness of hands and face, sometime accompanied by a distressing sensation of weight and burning in the stomach, rapidly followed by vomiting and diarrhœa; when the vomiting had once come on, the thirst would commence and be intolerable; cramps in the limbs and about the præcordia; blueness quickly extending towards the trunk; profuse cold perspiration (if perspiration it be) and loss of voice. The severer cases would terminate in death, in a period from three to six hours, while some might run on to twelve or more.

After the first four or five days, the mode of attack was not so invariable, for while burning thirst, pain at the stomach, cramps, asphyxia, perspiration, cadaverous coldness, and aphonia, characterised the malady, vomiting and purging might be absent, and yet the case would rapidly run to a fatal termination.

About this time and still later, many cases assumed a febrile character, the first pyrexial period of which might be called the choleric stage. But as the danger resides in this choleric stage, and the recovery of the patient wholly depended on arresting some one two of the symptoms, it will be proper in order to found a rational mode of treatment, to analyze these latter. (Sec. 7.)

Section VI.—However, before taking up that subject, let us stop a moment to examine the matter voided. The matter vomited, was at first what happened to be in the stomach, after that it was watery. The alvine discharges were without odour, in large quantities, whitish, like rice water or a mixture of arrow-root and water, this white substance has been ascertained to be fibrin. Perspiration abundant, cold, and slightly adhesive as if mixed with dissolved epidermis—doubtless it also contained fibrin; but this last fact has not been decided.

Beside the intestinal canal and the skin, all other organs furnished no secretion. Tears, pituita, saliva, and urine, the secretion of which is totally suspended, as to tears, the greatest anguish of dying in full possession of the intellect, surrounded at at once by all that is endearing and afflicting could not produce them. Some complained of great pain and desire to make water, but the bladder contained no urine, and after death was found to be contracted to the smallest size; this desire of voiding water might arise from the contraction of the posterior disk of

the bladder hard against the internal meatus, which on autopsy was found to be the fact. In this disease, there is reason to believe that every species of *secretion*, in ALL parts of the body is abolished. No known function of the intestinal mucous membrane, could form matter like unto that discharged, and as there is no circulation going on in the skin, but rather a complete state of asphyxia in that part, there can be no *secretion* of perspiration. We now naturally come to the question—Whence and how come these discharges? On the skin, certainly not from circulation, for there, there is none—*ex nihilo nihil fit:* and it is more than probable, that the capillary circulation of the mucous membrane of the intestines, is equally absent. It would appear as if the elements of the body composing the parts nearest to the surfaces, became subject to new affinities, forming new substances incapable of being retained by the membranes, but rapidly oozing through them. Two facts go to support such an hypothesis—first, The abundant new formation transuded, where no circulation exists; and second, the rapid *amaigrissement* of the body. This wasting of the body is not apparent, it is real; the usual roundness of parts are taken off, and tendons and other salient points become strikingly prominent.

(If one were permitted to indulge in speculation, it might not be unworthy to notice an hypothesis of the imaginative Darwin, by which he erroneously attempted to explain the formation of dropsies. He said it was a retrogade motion of the absorbents that gave out these collections. Though this assertion is a manifest error it is no less an error to deny that the absorbents are not, under certain circumstances, subject to an inverted action. The European physiologists, with the learned Mekel at their head, deny the fact. But how easy of proof—whence comes the overwhelming perspiration in Syncope? at a time when circulation, from which it is to come, is suspended. And by analogy, is not the intestinal canal, in its whole length, from the œsophagus to the sigmoid flexure of the colon subject to have its peristaltic motion inverted? why then not the absorbents.)

SECTION VII.—*Treatment*, First Symptom. The principal medium through which remedial means can be applied, is the stomach. We are therefore compelled to look to this organ first; and, as no remedy can be of service there unless it be retained, we must before all other things arrest the vomiting, if there be any, and suffer the stomach to become perfectly calm before any other

medicine or substance be introduced, lest, by so doing, we arouse the evil just subdued. As relates to the stomach there are two distinct stages in the disease, and on a just appreciation of these, will the success of the practitioner depend. The first is the vomiting, the second is the stage of collapse, or sinking, when all vomiting shall have ceased. Now, as the only known means, in this disease and many others, is to paralyse the stomach; we must carefully bear in mind, while prescribing for the first, not to overdo the thing, lest when we require the energies of the stomach in the second stage, we find them irrevocably lost in a collapse, which is joined to the common sinking of all parts of the body into death, (the sensorium excepted.) Here resides the first and greatest secret in prescribing for a cholera patient; and which, to the unobserving multitude, has occasioned so much apparant discrepancy in the treatment of different practitioners. In the first stage the most sedative treatment is essential; while, in the second, the very opposite, that of excitation.

How to paralyse the stomach, and consequently to arrest the vomiting. Three very particular circumstances are to be borne in mind—first the remedy, second, how to be administered, third, comportment of the patient. After all that has been said, it will be found that every practitioner, from the Ganges to the Vistula, has been forced, whatever his preconceived notions may have been, to look to opium as his Anchor of Hope: but it is to be regretted, that a remedy so good, so perfect, from mal-administration should have been turned into a two-edged sword, at once curing and killing the patient. Opium has been given in every form and in various combinations; this last is the error, as the pathological state of the stomach will readily account for. There is such an inordinate sensativeness at this stage in this organ, that it will not suffer scarcely the smallest bulk of any substance; how injudicious then, to augment the size of the remedy, by the addition of medicated waters, in themselves useless; and how much more unscientific to add a stimulant to your sedative, when the latter effect is the object of the prescription. Let the remedy then be a sedative, and not a stimulant; give opium, and let the dose be concentrated to the smallest size; give *one* grain of solid opium, it must be swallowed dry; if that be rejected, give a second, and so on to a third; it will rarely happen, if the third circumstance be observed, that a fourth dose shall be required. One grain of opium is so small a body, that the stomach can

easily bear it, while the same remedy, given in form of a draught from size alone shall be injurious.

3d. The patient is naturally restless, and any motion of the body is more or less communicated to the stomach, and it has been observed times out of number, that the mere turning round of the patient has so acted on the stomach as to set it again in operation. Motion of the body may act on the abdominal surface of the stomach, so as to affect the internal with a sensation of foreign substance, and thus account for the effect. To sum up, for the vomiting stage, give one grain of opium, and give it dry: give nothing else till all vomiting shall have ceased for several hours, and keep the patient in the most quiescent state possible. During all this time the patient suffers intolerable thirst; this he must bear with. Drink will be returned almost before it reach the stomach, and cannot relieve the symptom for which it was given, whilst it gives the patient one more dreadful convulsion, each of which hurries him to his end with a tenfold degree of velocity. Bear in mind, that *one* grain of opium is as effectual in arresting the irritability of the stomach as *ten* grains, while the latter dose would not only do the same, but also paralyze the stomach beyond the term of resuscitation.—This abuse of opium too frequently occurred in Montreal.

Second Stage.—All is now quiet, and now is the time to give stimuli. Small doses of warm brandy, warm punch, æther, or ammonia; but be careful to choose such as are palatable to the patient. The second symptom to be analyzed is the asphyxiated state of the extreme parts of the body, and also the apoplectic state, as the French call it, of the more central viscera. This asphyxia is known, as the term implies by the cessation of circulation, and blueness and coldness of the surface. Fortunately it is not difficult to appreciate the indication, though one may not be so sure of its success. The cause is perhaps internal, but unknown: but the wet state of the surface, by evaporation, contributes more rapidly to cool down to the term of death. While you are calming the stomach, take also in charge this last symptom, and treat it thus:—Dry the surface of the body by napkins, and then still further dry it, by rubbing the patient over with powdered chalk; and by previously heating the chalk, you will render it doubly useful. For this purpose, chalk was recommended by a gentleman of Quebec.* If chalk cannot be had, the best article as a

* Dr. Lyons.

substitute is flour; but be careful in heating it not to suffer it to grow brown, lest by the change of colour, its intransmissibility of caloric be diminished. By fomentations and moist heat, we are undoing with one hand, what we are attempting with the other. Moist heat is in the very teeth of natural philosophy; and he who uses it, publishes his deficiency in the collateral branches of his profession.

3d. The third symptom is spasm. In attending to the two first, as is recommended, we do all that is requisite for the third. Opium, as an antisposmodic, and frictions.

All other remaining symptoms are unworthy of notice in this hasty sketch. They are mere concomitants or sequels of the former, and require to be proscribed *pro re nata*.

Should the disease set in in the second stage, of course stimulating remedies are to be given at once; nor should drink in small quantities be refused, but be given in proportion to the capacity of the stomach; and for this purpose, the best I have found are small doses of coffee, and a dilute infusion of colombo.

Should the case run into fever, the indications are prominent and speak for themselves.

(F.)

Montreal, Friday, 22d June, 1832.

Drs. Baubier and Vallèe called in the afternoon, and volunteered to show us some cases of cholera; accordingly, we proceeded first to *l'Hotel Dieu*, (an excellent establishment, the more immediate attendants being the *Sisters of Charity*.) There we saw several cases, but they had arrived at that stage of the disease, in which the blueness had disappeared, as also the spasms. Afterwards, we saw with them a woman, about an hour before the fatal termination; there was then no pulse—cold extremities—and a purplish blueness both in the face and limbs—she had spasms clonic of the muscles, of the dorsal muscles, but very little of the extremities.

With those gentlemen we also saw several other cases. They think that the pathognomonic symptom is the blueness, as it is called; but it is rather a mahogany violet. Dr. B. divides the disease into three stages. 1st. That previous to the accession of the spasms. 2d. To the termination of the spasms. 3d. To death or recovery. The leading indication, he says, is to promote perspiration. He is very cautious in the use of opium; the

maximum quantity, he says, is gr.ij. For a stimulating application, I heard him prescribe brandy, one pint—vinegar, half pint—mustard, two table spoons full, and pepper, one table spoon full: these are to be boiled for a few moments, and then industriously rubbed over the abdomen and extremities, placing also bottles of hot water to the feet and hands. They are of opinion that the disease is non-contagious. Dr. Caldwell, who was just convalescing from an attack of the cholera, called on us. He stated that every body within the circle of his knowledge, has experienced the effect of the epidemic influence in some way or other. They all feel a sensation of heaviness, oppression and malaise about the præcordia, with slight colicky pains, or want of appetite, constipation or looseness of the bowels. Here he prescribes with remarkable benefit, pil. hydrar, gr.xv. followed in a few hours by tartras potasæ ʒij every two hours. This, he says, acts with great efficay in warding off the choleric symptoms, which would otherwise supervene. He lauds particularly this salt, and ascribes much of the success which he has had, to its use. He says, *that*, in connexion with the blue pill, brings away an astonishing quantity of fecal matter of great fetor. He also stated that he did not find much advantage from any treatment, when the disease was unequivocally formed. He also says, the disease chiefly attacks in the night, and towards morning. He cautions particularly against the encouragement of the perspiration, as he thinks the system very frequently succumbs under that evacuation. The most characteristic symptom, in his opinion, is the blueness. He however speaks in no unmeasured terms, in favor of the contagiousness of the disease. In this particular, he is an exception to every other medical man that we have yet seen, who has had any experience in this malady. Dr. Caldwell deservedly ranks very high in his profession, but unfortunately for his experience in this point, he was unable, from an attack of the cholera, to attend to his duties during the greater part of the epidemic.

According to appointment, we went with Dr. Baubier to make a post mortem examination. We went to the "Emigrant Sheds," which is a building appropriated to the sick of that class: there we saw some thirty-five or forty patients lying on straw, and exposed indiscriminately to the open windows and doors.—Men, women and children; the convalescent, dying, and the dead laid in an irregular line along the sides of the building. Only one

patient was vomiting when we entered, and this was accompanied with dejections. The substance voided both per anum and mouth was the same; it was very similar to the first washings of bloody meat, and at each time pain was the concomitant. She was also blue, and had had spasms.

We then performed an autopsia, which was done in the open air. The following are the particulars:—

The man's name was John Robinson, he had recently arrived from New Castle, Eng., and had served as a sailor on board. Just one week had elapsed, from the day of his admission. He entered the hospital with the symptoms of Asiatic Cholera.

As regards his general appearance, he was pale and extanguineous, except at the extremities, from the fingers and toes to half way up the fore arm and leg. Lungs healthy—heart much contracted, the left side felt firm and resistant of pressure, the right was more flaccid, but still contracted; little or no blood was in either of the cavities of that organ, and none in either of the large vessels opening into it. There was no liquor pericardii. The muscular structure of the heart was darker than natural. The stomach was much contracted; its mucous membrane was rather less adherent than proper, and the rugæ of the stomach were injected, particularly at the cardiac end. The whole of the gastro mucous membrane, exhibited a phlogosed state. The spleen and kidnies were both congested with blood, otherwise they appeared natural; except that they, as well as the liver, were softened in texture. The liver was completely and wonderfully gorged, so much so, that upon an incision being made into its substance, the blood appeared almost to stream from every pore, and the blade of the knife was in a measure concealed by the gush of blood. The gall bladder was much distended with thick black bile—the omentum was vascular and free from fat. The intestines presented an appearance of slight, darkish phlogosis. Commencing about six inches from the cœcum and proceeding towards the stomach for about two feet in its course, the cleon presented a peculiarly dark, apparently gangerous aspect; and the convolutions of the intestines were adherent by a recently formed membrane, but which was easily overcome. The internal surface of this part of the intestine was much inflamed, and the mucous membrane was easily abraded.

All the small intestines were contracted, and the large ones so much so, as scarcely to admit a goose quill; containing in lieu of

feces, a mahogany coloured fluid, very small in quantity. The extreme edges of the valvulæ conniventes were much injected. The bladder was empty—the blood was black and thick, no matter from what part of the body it flowed.

Saturday, June 23, 1832.

In the afternoon we called on Dr. William Robertson, a gentleman and a scholar: he showed us a barometrical and thermometrical table, as also the prevailing winds and diseases for the last four years. From these it appears, the season has been very backward. The prevailing winds are from the south west. The diseases last winter and spring, have consisted of the exanthematæ, and more particularly typhus. The latter disease and fevers of that character, had prevailed to an alarming and unusual extent in this city. He states that the cholera is curable in more than nine cases out of ten, if taken in hand in its premonitory stage. Even those which are the most sudden cases, where the patient drops down, as though struck by an electric shock, you will *always* find upon enquiry, he says, that there has been a previous state of disease. He then related his own case, which was as follows:—He stated that he was called from bed one night, and as he was putting on his pantaloons, he felt a sense of burning constriction around the diaphragm, as though (to use his own comparison,) a cord of twisted flannel, wrung out of scalding water, had been bound about the diaphragm. He at first attributed the sensation to the tightness of his drawers, seeing that he felt in perfect health the moment he put his foot out of bed: he loosened his underclothes, but found no relief; becoming alarmed upon this, he took a pill composed of pul. opii grj. pul. camph. prot. chlor. hydr ā grij and jumped again into bed, covering himself up warm. In the course of an hour or two, this sensation disappeared. He rose next morning, rather languid, but still able to go out. While making his visits, he was seized with cramps of the gastrocnemii; he took what he happened to have in his pocket, pul. opii grj. immediately drove home, went to bed, and remained there a day or two, until he completely recovered.

He states that most cholerics experience some premonitory sensations similar to these; and that it is during this stage, and he almost said this stage alone, that any good can be done. He exerted all his eloquence to impress on our minds, this important advice; to the neglect of which, he says, is ascribable much of the

fatality which has attended this disease, viz :—That when you are called to a man who is said to be very ill, almost dying; and when at the same time, you are also called to a man who is slightly complaining, you should go to the latter rather than to the former. He has made some autopsies; but he states that there is no appearance which is constantly present in every case. He also gives opium, but it is in small quantities: when there is vomiting, he prefers the extract, when not, he gives the tincture: for the spasms, he prefers dry heat, as hot sand, hot flannels, &c. and not frictions, because they expose the patient to the open air. He, in accordance with the other medical men, recommends strict abstinence in eating and drinking during this disease. In the diarrhœa, which frequently is a sequel of the cholera, he, in preference to calomel or opium, administers the mix. cret. comp. cum. opio. and, he states, with the most marked benefit. He also stated to me, that near a month previous to the appearance of the cholera as an epidemic, he was called to a case which he would have denominated "Asiatic Cholera," were the disease then prevailing.

Dr. Stephenson referred to the following communication for his ideas with regard to the pestilence :—he entitles his paper

Observations on the symptoms, pathology, and treatment of the prevailing epidemic, called Asiatic Cholera.

I have seen a very great number of patients labouring under this disease in its different stages; and from what I have observed during the progress of the symptoms, and upon dissections after death, I am convinced that it is a disease of congestion of the viscera, particularly those of the abdomen, pelvis, and head. I found, upon dissection, that the vessel of the nerves of the spinal marrow were gorged with blood, not from over-action, but from want of the power of circulation. The mesentery, and all the vessels of the abdomen and pelvis, were as if dyed with venous blood—the arteries throughout were much contracted and empty—the surface of the body presented a great want of vascular action, as denoted by the color and the state of the vessels, this being a necessary consequence on the internal disease. It must not, however be forgotten that the practitioner has to contend with the violent symptoms of cholera, as vomiting, purging and spasms, denoting a great derangement in the functions. From what I have said, I conceive

it absolutely necessary for the practitioner, to consider as vitally important the removal of the congestion, while treating the other symptoms connected with cholera. Having given what I consider as the proximate cause of the disease, the next question which presents itself, is the *remote* or *primary* cause of the disease; although my present limits will not permit me to enter upon this subject, yet I cannot dismiss it without saying that I do consider the disease as epidemic, not contagious.

Its attacks are not uniform, or by the same precursory symptoms. In some cases, the first symptom is a discharge by stool of pale fluid, resembling dirty water or water gruel. Sometimes the discharge is clear water, tinged with brown flocculi. These cases are often fatal, because the patients are not alarmed by this symptom, and frequently send for medical aid when too late. In some cases the disease is ushered in by a sense of fainting, referred to the pit of the stomach, and rapidly overpowering the whole system. In other cases, spasms of the muscles of different parts of the body, as the extremities, diaphram, &c. are the first warnings of the disease. Again we find the patient suddenly seized with vomiting, more or less violent. In some other cases, all the above detailed symptoms attack the unfortunate victim, and give rise to a very rapid course of disease. In the consideration of the treatment which I recommend, and which I have found eminently successful, I shall be as concise as possible, because of the great pressure of professional duty, and because I intend publishing at some length, my opinion of the prevailing epidemic.

Having been very successful in my treatment of congestive typhus during several years, I have, as far as possible, employed the same treatment for the present epidemic, bearing in mind the symptoms of Cholera already spoken of, which require some modification of the treatment; therefore bleeding (so very beneficial in congestive typhus) is a dangerous remedy in this disease, because of the *great* and *rapid* exhaustion of the powers of the system by the aforesaid choleric symptoms; yet I am inclined to believe that bleeding, within the first fifteen minutes, might be of service. My trials of the practice, in the present disease, do not not warrant me to continue it, not having opportunities to resort to it so soon as might be necessary. I have found in congestive typhus, it is of vital importance to equalize the general circulation, and in furthering this end, I have derived very great advantage from the internal use of nitrous ether, and tincture of assafœtida in considerable doses,

and keeping up the heat of the surface by sinapisms, blisters and dry heat—taking care not to carry these measures too far, because of the injurious effects thus produced, as very frequently seen in the employment of the hot air bath of the late Dr. Armstrong.

When the equilibrium of the circulation has been established, I have given limited doses of alteratives to re-establish the functions of secretion, keeping in view the analogy between congestive cholera and congestive typhus. I have administered nitrous ether and assafœtida tincture, each a drachm, every hour if the stomach would bear it, until the patient felt better. But as there is frequently an irritability of the stomach, I have often omitted the assafœtida. By this treatment, I have roused the internal circulation and general nervous energy. If vomiting were present I have added to the ether half a drachm of laudanum, or a grain and a half of opium: the latter I prefer, because of the smallness of volume—subsequently a less dose of ether every hour, as long as the symptoms require its continuance, and the opium *pro re nata*,—as soon as I possibly can, I interrupt the use of the opium, and generally, two or three grains suffice. While these measures are employed, the external heat is to be raised to and kept at the healthy standard, by the application of dry blankets, hot bricks, or bottles of warm water applied to the surface.

If the first symptom be purging, as above mentioned, (a symptom which may continue for several hours, or even days before the patient be alarmed,) then ether is to be used; and repeated doses of chalk and opium will arrest the discharge, taking special care that the patient remain in the recumbent position, and abstain from all solid or fluid ingesta. I have frequently allowed, with advantage, a small quantity of port wine and water, or brandy and water, every half hour—if I could depend on the patient not taking more—but I have frequently found them trespassing in such cases, and producing dreadful consequences. I have also found benefit from half a glass of brandy, administered with the first dose of ether, to assist in exciting the internal circulation. When the disease makes its attack by any of the other symptoms spoken of, I have resorted to the ether, opium, assafœtida and recumbent position with external heat, *pro re nata*. If there be much distress produced by spasms, frictions over the coverings are of service—but the patient must not be exposed, because of the injurious effect thus produced.

When the symptoms of the disease have been subdued, it then becomes necessary to restore the functions of the system to the healthy state. Sometimes after the attack, looseness will continue —I have, in such cases, derived marked advantage from the recumbent position, the use of chalk, as spoken of above, and alternated with some of the blue pill and rhubarb. Sometimes constipation supervenes,—a much less troublesome symptom; in such cases, I have given two or three cathartic pills, composed of colocynth, jalap and submurias hydrargyri, repeated every three or four hours until the bowels were moderately moved, either alternating or following up with five or six grains of blue mass and rhubarb, to produce a healthy secretion. It is proper to state, that I have used as an auxilliary to assist in checking the frequent discharge from the bowels, injections of laudanum and starch every hour, sometimes with, and sometimes without apparent benefit.

In fine, by the foregoing treatment, I have saved every case of cholera to which I have been called, *within one hour after the attack;* when no *collateral circumstances* have baffled my efforts, such as much cold fluid taken, cold water and vinegar, cider, the nostrums of apothecaries; and when the patients have *closely adhered to my directions.* I believe several medical gentlemen of this city have adopted the same general pathological principles of the disease, although, as is quite consistent, the means may be modified by different practitioners.

J. STEPHENSON, M. D.

Professor of Surgery and Anatomy, in the University of M'Gill College, and, for the past ten years, one of the Physicians of the Montreal General Hospital.

P. S.—I have found benefit to the patient, after the symptoms have subsided, by allowing a tea spoonful of very strong coffee, or very strong tea, without milk, to be taken every half hour, and, after a short time, a similar quantity of good beef tea (bouillon) to gradually restore the tone of the stomach.

J. S.

To the Editor of the Montreal Gazette.

Sir,—You are welcome to make use of the following communication, being the result of unfortunately too extensive experience. We conceive it our duty, (now that we feel grounded,) to publish the method that we have adopted, for arresting the

scourge that has desolated our city lately; and which, through the medium of your paper, may be the means of affording a knowledge to the world at large, of that plan of treatment that has been so successful in our hands.

To those who know us we need not bring any other proof than our own assertion, but as it may reach places where it would require some authentic corroboration, we shall subjoin Dr. Holmes', Dr. Caldwell's, and Dr. Nelson's voluntary attestations—which reflect as much honour on these gentlemen for their candour, as they are creditable and gratifying to us.

I have been trying your remedy, and have already found it beneficial by several reports.

A. F. HOLMES, M. D.

I consider the practice the most rational that has yet been adopted, and would most earnestly recommend it.

W. CALDWELL, M. D.

I feel it a duty I owe to Dr. Arnoldi, and to the public, to say, that I experienced great relief from the advice of Dr. A. in the incipient stage of the Cholera, of which disease I was affected. I am satisfied that his opinion on Cholera, and his practice in the same disease, are highly scientific.

ROBERT NELSON.

Having now so many data to go by of the efficacy of our practice, in this most direful disease, (Cholera,) and knowing that the members of the medical profession are not agreed upon a decided or uniform mode of treatment, we take the liberty of announcing to the public, through the medium of your types, that our practice consists in ordering a *total* abstinence from all liquids, (and solids of course) from the moment the person feels himself under the influence of any symptom threatening Cholera, by which sufficient time is gained to obtain proper medical advice. Our prescription is simply one pill, containing one grain of fresh opium and seven of calomel, which is to be swallowed dry, without the aid of any liquid, if possible. The use of all beverages, we then insist upon being most strictly abstained from, until every symptom has subsided, and something like hunger has returned. In few instances have we had occasion to repeat the pill, unless

the patient's stomach did not retain the first, (and which was uniformly occasioned by the fluids present in the stomach at the time,) and in the course of a few hours, we generally followed up by an ounce of epsom salts, dissolved in half a pint of water, and a wine-glass-full taken every hour. The subsequent treatment varied according to the peculiarities of the case, and could be regulated by the judgment of any practitioner, keeping strictly in mind the yet remaining irritability of the stomach as to fluids. Our exertions have been too frequently paralysed by the absurd practice of taking laudanum or opium pills previous to sending for advice. The peculiarity of our plan, and to which we ascribe our whole success, consists in obtaining the arrest of the urgent symptoms by the least possible dose of opium, *and absolutely doing nothing*. The plan is too simple to be generally credited, but hundreds have experienced the efficacy of it; and we would strongly recommend, at least, the first trial to every medical man.

The plan of sweating the patient we have had too frequent occasion to lament and discountenance, but we nevertheless do every thing in our power to restore heat to the extremities, by the application of bottles of boiling water, hot bricks, &c &c. in the usual manner; frictions with hot *dry* flannels, (sometimes in desperate cases, sprinkled over with mustard.) In short, *dry heat* in any manner whatever, and this we find most speedily successful when the body itself is but slightly covered. The spasms are best relieved by keeping the patient in one posture, the slightest motion being apt to induce them. We candidly acknowledge that when the blue stage, copious sweats, and cold extremities have set in, before medical aid is called for, we consider the case hopeless; but even under the most appalling circumstances, the perseverance in the above injunctions has occasionally been attended by favourable results.

Our injunctions therefore, are, that no medicine be kept in the possession of any individual for the purpose of being taken, either as a precautionary step, or before calling in medical aid.

That no person feeling indisposed take medicines from any body but a professional man.

That a correct detail of all the symptoms be given by any intelligent messenger to the doctor.

That no person should rely on the efficacy of any of those drugs that are vended as specifics; every one of our fatal cases have been preceeded by the exhibition of these drugs, or the

opium pills, so generally supposed to be the first step towards the cure, the folly of which cannot be too strongly reprobated.

That when a person has once put himself under the care of a medical man, he should continue to follow his perscriptions *solely*. The interference of friends has been attended by the most fatal consequences, and that of professional men not less so, exclusive of the indelicacy and want of consideration that *should* subsist between the members of the profession: as it is but right that he who has the responsibility should, at least, have the management.

D. ARNOLDI,
FRANCIS C. T. ARNOLDI, M. D.

June 21, 1832.

Tuesday, June 26, 1832.

We went to see Dr. Arnoldi & Son, and from them we received a corroboration of what they have here stated. They say by this plan, that they have not lost one patient, wherein they have been called within the second hour after invasion, and where they have had the sole and entire management of the patient. With regard to the contagiousness of the disease, they are undecided, but this however they did state—that they did not think the Asiatic Cholera would have ever visited Canada, had not the first influence been received at Quebec. The first case of which they heard as occurring here, was in a passenger from a steam-boat from Quebec; and the first case they were called to, was an old lady living in the upper part of the city, who had eaten a head of salad at night before going to bed. They then had two or three cases scattered about the town, which proved fatal, but which had no communication with each other, or the emigrants. They have made but one autopsia, and that was in the man who died on board the steam-boat; in him they discovered disease confined to the small intestines, there being none in the large. The examination was however not minute. In the first three or four days they state the disease was confined to adults, but that afterwards children were also attacked. With regard to the remedy employed by the Quack, Stephen Ayres, they say they have seen it faithfully tried, and in almost every instance, with a fatal result. He says it must have acquired its reputation from being given to those imagining themselves to have the Cholera;

and their minds then becoming quieted, their systems have responded to the tone of their imagination.

Case of Cholera.—Elizabeth Challion, a native of Birmingham, aged forty-seven years, a woman of rather spare habit of body, has been married seveenteen years, and has had no children. She was addicted to habits of intemperance for the whole of the latter period of time, her principal drink being gin, impregnated with the hiera picra. For the last ten or twelve years she had been sick, more or less; she being afflicted with cough and bowel complaint—her menstrual discharge took place only once in about three or four months. She had the Asiatic Cholera in one of the worst forms and most marked manner. It was about forty-eight hours that she was sick, and the post mortem examination was instituted about fifteen hours after death. She had been in this country about a year.

Her general appearance was pale, extremities had not a well marked ecchymosed aspect. Upon cutting into the muscles, they had not that dark appearance which was found in the aforementioned case. The lungs were found much collapsed, though crepitous; some ancient adhesions were formed. There was no liquor pericardii—right side of the heart was soft and flaccid, the left was hard and contracted; its external surface was most wonderfully injected—the coronary vessels were as well marked as the most successful injection could shew. When cut into, the cavities of the heart were found to contain a serous uncoagulated blood, of a dark colour: that which the older writers called polypi were also found there. The omentum was also well injected, especially at the most depending edge. The internal surface presented one of the most beautifnl specimens of gastritis that could be imagined. The patches of varied extent, presented the different shades between a bright vermillion and a dark crimson; but I did not observe that they were more frequent in one than the other end of that organ. In the upper part of the duodenum, the appearances were similar in one respect to those observed by Annesley, viz.: a secretion of a yellow, flocculent substance, from the mucous membrane. The vermillion was not here so conspicuous. The whole tract of the small intestines exhibited a state of recent intense phlogosis, varying in colour from the stomach; it being much darker and more deeply injected. In several parts along the termination of the ileon, were observed cicatrices of

ulcerated mucous membrane, differing in length, from one third of an inch to two and a half inches. The glands of Peyer and Bruner were inflamed and prominent: the cœcum was found also injected on the internal surface, as was also the remainder of the alimentary canal, though not so intense. The calibre of the large intestines was much diminished, and these contractions, in a measure, were evident through the whole of the canal, only in a very slight degree. The small intestines presented on their peritoneal surface, a purple colour. The contents of the stomach consisted of a dirty yellowish green pultaceous fluid, of not quite the thickness of molasses. In the small intestines, this same fluid was found, though it had lost the green, and assumed a brownish appearance.

The liver was pale, marbled and exsanguineous, except in the large vessels, which bled freely upon being cut; in its size, it was very little, if any, altered. The gall bladder was distended with bile, dark coloured, and just about as thick as molasses. The spleen and kidnies had undergone little or no alteration; the internal surface of the bladder had also an injected appearance. The uterus was natural, as regards its size, but was congested and red on looking at the peritoneal coat. The mesentery was also injected in different and irregular parts.

Friday, June 24, 1832.

The steward of the 'Emigrant Sheds' told me that he had seen the disease in Asia, and was there when it broke out in 1817, he being then attached to the army. He stated that he was then steward of the cholera hospital in the East Indies. He said that the best prophylactic he had ever seen used, and it was that which he himself employed, was to keep the bowels regular by purgatives, taken at regular periods, and about a glass of brandy per diem.

While there, I took a minute of a case.—Thomas Craig, born in Scotland, aged forty-four years, a man of large size, and plethoric habit of body, though far from being bloated in his appearance; had been in this country two years, and was, at the time he was taken ill, mate of the British America, steam boat, though recently he had been engaged in one of the Durham boats.—He was taken ill on Saturday, about 7 P. M. being seized with vertigo, diarrhea, and pain and cramps of the extremities, with vomiting and thirst. Upon minute enquiry it was found that he had been accustomed to take three or four glasses of ardent spirits a day, and had for

the last few days been suffering under a looseness of about three times daily. He was brought into the hospital about 9 P. M. having the symptoms above mentioned, with blueness of the nails and an ecchymosed appearance of the feet and legs, from the knees downward; and of the hands, from the elbows. His dejections were like broth, not bilious at all. His tongue when I was there, (11 A. M.) was fiery red on the edges; the centre and whole surface had a yellowish brown thick coat of fur, and there was much jactitation. The steward had given him tr. opii gtt. xxx. and that is all the medicine that he has taken. The cramps came on about every fifteen or twenty minutes, and he calls out to be rubbed over the gastrocnemii, which is done with the stimulating mixture of brandy, vinegar, &c., before mentioned. (6 P. M.)—He is no better; the symptoms remain as before, except that the pulse has become less strong. No medicines have been administered in addition. He died at 4 o'clock next morning.

Monday, 25th June —We proceeded to the autopsy at 7, three hours after death. The dark colour of the hands had, in a great measure, disappeared; that of the feet remained, as far up as the knee. In the spine, the thecæ of the vertebræ were very vascular, and fluid was effused beneath that process of the dura mater, rather greater in quantity than natural. The fluid was aqueous, transparent, and slightly viscid; there was no ramollisement of the chord. The dura mater of the brain was very much injected with dark purple blood, and the substance of the cerebrum was upon the cut surface studded with red points, very numerous, shewing that there has been great determination to that organ. The left lobe of the cerebellum was much more vascular than the right; indeed the latter could scarcely be declared abnormal. The muscles of the body, when cut, evinced great vascularity, by pouring from its severed vessels, much dark blood. The lungs were collapsed more than the first, but less than in the second autopsy before mentioned, very much congested, but crepitous. There was an aneurismal dilatation of the whole heart, little liquor pericardii, and both the auricles and ventricles contained much black thick blood; the left cavities were fuller than the right. The mucous membrane of the bronchiœ was also injected. The omentum was, as was found in the other autopsy, much coloured; but more especially at the inferior edges. In the stomach, the mucous membrane was found thickened and darkened, shewing that there had been former disease; but in addition to this, there were found

traces of recent inflammation in the brighter and fresher red of several spots of that membrane. The inner surface of the duodenum was covered with that yellow cheesy matter, alluded to by Annesley, in his "Diseases of India." On its exterior coat, as well as on that enveloping the whole of the small intestines, there was a bright red net-work of vessels. On the lower two or three feet of the ileon however, this red assumed a deeper cast, and presented a light dirty purple colour. The peritoneal coat of the large intestines was much darker than usual, presenting rather a black cast. The internal surface of the small intestines, was vascular, and the lower part of the ileon was more particularly so. But the onus of the disease appeared to have been situated in the large intestines; their mucous membrane was in several places similar in colour to the dark purple plum—and its adhesion to the muscular coat was very slight, and was very nearly approximated to the gangrenous state. The right lobe of the liver was pale, though marbled in some parts; the left lobe was much more congested, pouring forth much more blood when cut into. The gall-blader was distended with bile, apparently natural. The small intestines contained a small quantity of thick dirty yellowish fluid, but contained much fetid gas. The large intestines contained proportionally much more of a muddy, thick fawn coloured fluid. The bladder was empty. Mesentery not particularly vascular. The spleen and kidnies natural.

Thomas McAvoy, born in Ireland, age thirty years, has been engaged on rafts for twelve years, in Canada, on the Grand River. He is a large, full sized man, of apparently usual good health. He has been accustomed to take five or six glasses of ardent liquor a day, for a long time. On Sunday noon he was attacked by cramps, and a blueish red colourization, with coldness of the hands and feet, vomiting and purging of a "broth-like" fluid, great debility, and precordial anxiety with a sense of tenderness in the abdomen, the fingers and toes were pinched and wrinkled between the joints. Nothing was administered to him but a few drops of tr. opii, as usual, and stimulating frictions very slovenly performed, to the extremities. He died Tuesday succeeding, after about thirty-six hour's sickness; and about fifteen hours after death we proceeded to the autopsy. This was, as usual, performed in the open air. His general appearance:—body pale; legs and arms, to hips and shoulders, were purplish blue; belly not tympanitic, muscles stiff. The muscles were dark and

full of blood; the spinal chord was itself natural, but its envelopes were much injected; the venous sinus of the vertebræ was much distended with black blood. The liquor pericardii was about of the usual quantity, but it was thick, like oil; the right auricle and right venticle were both much distended, with a dark molasses-like blood; the left cavities contained little or no blood; the coronary vessels were distended, by blood, to their full size, and this injection appeared to extend to the capillaries of those vessels; the pulmonary arteries were also full; the parieties of the aorta and large vessels were themselves also injected. Along the right edge of the heart, several vascular spots appeared, similar to an ecchymosis.

The lungs were collapsed and crepitant; no adhesions—the liver was pale and marbled on its exterior surface, but its interior exhibited some slight marks of congestion. The gall bladder was much distended with bile.

The stomach was larger than natural, and contained about $\frac{z}{3}$ij of a yellowish brown thick fluid; the vessels on the exterior surface of the stomach, were injected, and the large vessels of the omentum were beautifully injected, running to the lower border, and sending out branches on either side, until at the extreme edge, it was one mass of dark injection.

The mesentery also evinced its vascularity by the fulness of its vessels. The bladder was empty, spleen and kidnies normal. The stomach, when opened, exhibited the dark thickened state of the mucous membrane, which was exhibited in one of the former cases. In different places on that surface were found spots, perhaps more abundant at the cardiac end, of vascularity resembling in appearance, a recent ecchymosis under it. At the pyloric end, a pin was found, passing between the mucous and muscular coat, each end projecting into the cavity of the abdomen The exterior surface of the intestines, exhibited a vivid red appearance, which was perhaps, rather increased about the termination of the ileon. The internal surface of the small intestines, was much injected, and exhibited beautiful ramifications of vascularity; such also was the state in the large intestines, but it was of a darker hue, and it was very much diminished as it approached the rectum. In the small intestines was found a light dirty yellow coloured molasses-like substance; this was darker in the large intestines, but not so plentiful, because the capacity was

very much reduced on account of the firm contraction of the coats.

In the brain, the meninges were very much injected. The substance of the brain exhibited, on its cut surface numerous red points: this was not so much the case with the cerebellum, and not at all, with regard to the medulla spinalis.

(G.)

The Board of Health of New-York having determined to send a commission to Canada, to investigate the origin and nature of the epidemic then raging in that province, two gentlemen were selected for this honorable service. To have accomplished this task to its fullest extent, would have required the labor of many weeks; but the danger was imminent for our own city, and it was of the utmost importance to furnish the required information with the least possible delay.

Dr. Devan and myself accompanied the commission as far as Montreal. At this place, Dr. Devan occupied himself with statistical researches respecting the epidemic, whilst I was engaged in studying the disease itself. The result of my observations are annexed in the form of a report.

The name alone of cholera produces terror; the dread of it disperses the population; and the panic which precedes it, is one of its most murderous weapons.

Differing from other epidemics, it very rarely attacks without previous notice: it is preceded by evident symptoms, which are readily combatted. In what then, consists the disease? The solution of this question would naturally conclude this report; but I have been forced to anticipate the exposition of my opinions, by admitting a peculiar morbid principle, which I cannot define, but which can hardly be called in question. This principle is every where active: it seems to have a more particular affinity for intemperate, uncleanly people, worn out by debauchery,—and it is among this class, that it commences and extends. It then attacks the more elevated classes, and those first attacked, are always victims. When the mortality has become great, the disease loses its intensity; this is in accordance with what we saw in Canada, and which has been observed every where in Europe and Asia.

It scarcely ever commences without a premonition of several hours and even days. These are diarrhea, with or without pain in the stomach or abdomen; nausea, vertigo; weakness and a feeling of exhaustion; sleep continues sound and even more prolonged than usual; an error or excess in diet; a fit of passion; a change of temperature, &c. have been with most patients, the signal for the commencement of choleric symptoms. Most usually, in the night, a sharp colic pain, accompanied by an abundant stool, occurs immediately; a vomiting ensues of half digested matter, followed by cramps in the calves of the legs and the thighs, the feet, and at a later period, in the upper limbs. Copious vomitings and purgings succeed with rapidity; the excretions are watery and transparent; a burning thirst succeeds; the pulse which at first is develloped, becomes small and thready, and finally disappears. The temperature of the body, and more particularly of the extremities, rapidly lowers; cold and abundant sweats appear; the face becomes sharp and anxious; eyes hollow; lips blueish; tongue and breath cold; the secretion of urine is suppressed; pain occurs in the epigastrium, but that arising from cramps, seems to occupy the attention exclusively; sometimes, all the muscles of the trunk become spasmodically affected; a blueish color appears on the hands and feet, sometimes extending over the whole body. Respiration alone seems but little disturbed; but finally becomes more accelerated—less profound; and death closes the scene.

After this brief sketch, we now propose to submit a more particular examination of the various symptoms which occur in Cholera. In speaking of the premonitory symptoms, diarrhea was mentioned as one of the most constant. In some cases, I have observed the diarrhea to be suspended upon the invasion of the disease, and vomiting alone arise, and *vice versâ*. The vomiting does not always consist of transparent fluid, but is sometimes greenish, and even brown. When this occurs, the symptoms generally are milder. The cessation of all evacuations, is not, invariably, a good symptom.

The tongue of cholera patients is flat, (rarely pointed;) whiteish in the centre; rose-colored on the edges; and cold to the touch. The pulse is not always an unerring index. I have observed it to rise perceptibly a few moments before death; and I may add that the pulsations of the heart are always less than the pulse would seem to indicate. The *discoloration* varies in intensity, and is one of the least constant symptoms. In the first case which

Drs. Baubien and Vallé showed us, the discoloration was general and of a slaty blue. The capillary veins were gorged with blood The woman died within an hour after our first visit; and exhibited a more distinct example of discoloration than I have ever seen since.

This discoloration is owing to the engorgement of the venous capillary vessels; and I have often traced it from its commencement to its distinct blueish hue Many die without any blueish tinge whatever, but merely a slight discoloration.

The *skin* becomes cold and covered with an abundant transpiration. It appears as if soaked in water; this appearance is always constant.

The *breath* is always cold in the state of collapse; the *respiration* is commonly not affected; but after some time, it becomes more frequent, and less deep upon the approach of death.

Upon questioning patients with regard to the seat of their complaints, there is a great variety in their answers: some refer their pain to the heart; others to the stomach or abdomen, while many have no pain whatever.

An unquenchable thirst is the most constant symptom, and if gratified, unless in small quantities, is followed by vomiting. The intellectual faculties remain clear and unclouded, until the last moment. I have never seen the choleric symptoms last more than three days, nor less than ten hours.

When the violence of the symptoms abate, I have never, except in a very few cases, noticed a full and perfect convalescence to take place. More commonly, the following appearance takes place.—Jactitation ceases, and the body remains in a torpid state. The pulse becomes distinct; the face flushed; the conjunctiva injected; the tongue coated in the middle, and more or less red on the edges; sometimes red all over, dry and contracted; the epigastrium painful; tremor in the limbs; intellect confused, with occasional delirium; very frequently coma ensues—and death closes the scene

This sequel of cholera has been named the typhoid state, and destroys as many as cholera itself—more particularly, when it attacks the Irish emigrants, who are in the habit of drinking to excess; and even in the hospitals, the first thing they take after the symptoms have ameliorated, is rum or brandy in large quantities. Under the influence of these irregularities of diet, the choleric symptoms sometimes re appear, and carry the patient off rapidly;

at other times the stomach appears to possess sufficient powers of resistance, and coma supervenes.

Results of Autopsical Examinations.

In pursuing these examinations, I endeavoured to investigate the pathalogical alterations without reference to any thing which I might have previously read; it was desirable also to study the effects of the disease upon persons who had died in different stages of the disease. Some of them had taken no medicine, except a small quantity of opium.

External appearances.—Stiffness of the limbs, occurring a few hours after death; sometimes the muscles were contracted as in life; fingers always beat and stiff; abdomen flattened.

Head.—Sinus of the dura mater engorged with thick black blood, whatever may have been the duration of the disease The external meninges exhibited no change. The arachnoid opake in many places, particularly among those who sunk under the consecutive disease Its base transparent in those who died in a short time. Pia mater always injected, and sometimes in a manner not to be equalled by artifical means. The choröid plexus presented the appearance of a minute net-work. The ventricles contained an unusual quantity of serous fluid, particularly among those who died under the consecutive disease. This serosity was sometimes rose colored. The cerebral mass appeared generally to be firmer than usual. Spinal marrow commonly natural, occasionally pink. The arachnoid membrane opake in many places; the substance of the spinal marrow slightly firmer than usual. In one case which had died in thirty-six hours, with violent cramps, there was a distinct softening opposite the third dorsal. In examining the great nervous foramina, I never noticed any great alteration; but it may be necessary to add, that I never completely dissected the great sympathetic.* I examined however, very frequently the semi-lunar plexus, but could never find that it was more red than in its normal state. I have no doubt hat it participates in some degree in the general venous congestion of the capillaries, but I cannot affirm that its internal substance was altered in color or consistence.

* Most of these autopsical examinations were made on the banks of the St. Lawrence, in the open air, and often surrounded by an ignorant besotted population, who were, of course, opposed to examinations of this nature.

Chest.—Pleura healthy, with the exception of some slight adhesions. Lungs collapsed, crepitant, containing little blood. No serosity in most cases in the pericardium. The cardiac veins much injected; the cavities empty in some cases—in others filled with very thick blood and coagulated lymph. The left cavities frequently empty. The pulmonary arteries contained clots of fibrine; the veins and aorta filled frequently with black blood. The diaphragm presented a natural appearance.

Abdomen.—Stomach contracted, externally the coronary veins well defined, and filled with black blood. Internal surface covered with a viscid gray mucus, with a slight greenish tint in some individuals. This mucosity was at times very thick and adhered so strongly to the mucous membrane as to be separated with difficulty. The membrane itself softened reddish, often thickened at several points, and decidedly inflamed. This morbid secretion was common to almost all which I examined, whatever might have been the duration of the disease. I did not find that the inflammation was greater at the cardiac than at the pyloric orifice.

Small Intestines.—General appearance reddish, and contracted in several places. In one individual who had died of the consecutive disease on the eighth day, I remarked many processes formed by membranes of a new formation. In most cases, the duodenum and end of the ileon was reddish brown the latter frequently of a livid blue color. The internal surface of the intestines was dark red in the duodenum; the mucous membrane inflamed, but tolerably consistent and little thickened. The jejunum was likewise red, but presented no well marked traces of inflammation, except in two cases where the gastro-intestinal irritation was exhibited in the highest degree.

The ileon often covered with small elevated points, more or less dark colored and surrounded with a reddish ring. These are inflamed mucous follicles, which are much altered in some cases, but not constantly so in all. The last part of the internal surface of the small intestines, frequently presents a livid reddish brown appearance, as if it had been soaked in blood for several days. This color did not disappear after repeated washings, and I remarked it in cases which were examined an hour after death. When the mucous membrane was detached, the subjacent parts were found to be gorged with blood, the membrane itself preserved its color, although it was not quite of so deep a hue.

I cannot undertake to say that it was inflamed, its consistence was not altered, and even its semi-transparency remained unchanged.

The large intestineswere generally contracted; externally more or less rose colored, sometimes white. Throughout the whole extent, its internal surface was echymosed, and frequently, the mucous membrane was thickened in several places. At times, I found the characteristic excretions of this disease in the intestines, but more frequently I found them empty.

The peritonium I never saw inflamed but once; the mesentery and epiploon was always strongly injected even into the venulæ.

The liver presented a great variety of appearances, sometimes it was a dark brown, oftener it was curiously mottled. It contained no unusual quantity of blood. The gall bladder contained a very thick dark colored bile, and in some cases much distended, but in others the quantity was diminished.

The pancreas and spleen offered no change. The kidneys and uretus contained no urine; the bladder contracted and empty, scarcely exceeded in size a small egg. Such were the pathological changes, observed in those who had perished by ths disease. The examinations were usually made a short time after death, and o this cause may be attributed the fact, that the cerebral mass was nore firm than in those which are examined eighteen or twenty hours after death.

(H.)

As an attaché to the Medical Commission from the city of New-York, (Drs. Rhinelander and De Kay,) to investigate the Cholera prevailing in Canada, I entered upon the field of observation, not only undecided with regard to the proper mode of combatting the disease, but also unprejudiced as to its contagiousness. On both those points, we are happy to say, our minds are now resolved. We think there remains not a doubt, that the cholera is an atmospheric disease; that it is one, dependant upon a something in the air we breathe, both for its origin and termination: a something which has as yet escaped the investigation of the pneumatic observer, but the existence of which, we as well as all who resided in the choleric region, have felt. As regards the treatment, it is based not only upon the united experience of those who have administered to the living, but it is derived from the appearances found in our own autopsical examinations. These

points, however, we leave to be discussed by older and abler hands than now wield the pen; and to them we resign the pleasure of presenting an array of facts, which ought, and doubtless will, supersede the speculative doctrines of the closeted contagionist, and confirm the hesitating practitioner in the course to be pursued in the event of the spread of that awful scourge among us. Ours be the humbler, though perhaps not less useful task, to point out the precautionary means to mitigate, if not to prevent an attack of this awful pestilence.

It cannot have escaped the attention of every reader of the journals, that at Montreal this disease has committed most extensive ravages and with more than usual malignity. But there are reasons for such an event, which should quiet our apprehensions, and make us hope a more happy issue out of the ordeal which threatens us. In that city (to use round numbers,) there are about 30,000 inhabitants and of these, about 3,500 have been attacked, and 1,500 laid low in their graves by this fearful pestilence. It must, however be taken into consideration, that there are only seventeen or eighteen physicians for this entire population, and that during the prevalence of the epidemic, from indisposition, not more than twelve of them were able to attend to their duties. It becomes, therefore apparent to every one, how many must have perished for want of the regular and assiduous care of their medical attendants; and also, what numbers must have sunk without having seen the face of a physician. That such is the fact, we have not only been told by the medical gentlemen themselves, but many corroborative instances have come to our own immediate knowledge. Moreover, the moral and physical condition of the recently landed emigrants and lower classes of Canadians, has rendered them peculiarly obnoxious to the disease, by causing them not only to become dupes to quacks and their preventive nos rums, but to yield themselves up to their despondent fears, and consequently to intemperance.

Now in the city of New-York, there are upwards of seven hundred physicians to its population of 200,000; and consequently, even were the disease to attack a number of our own citizens, comparatively as large as at Montreal, it will readily be seen that all may be attended to, more especially as appropriate hospitals are to be provided for the destitute poor. These things are mentioned with the sole desire of doing away the apprehensions of the people, and inspiring public confidence: if we can succeed in this,

the disease will be disarmed of its terrors, and consequently of much of its mortality. *For if there is any one cause more than another, that predisposes to an attack of this Epidemic Cholera, it is the fear of it*—And this is a truth which should be graven in letters of brass on the minds of the people. What is it that makes the panic struck fugitive from this disease more liable to its attack, than the attending physician, or the ministering servant of God. It is, (ceteris paribus,) solely because in the latter, there is a calmness of mind and disregard of danger, which holds the disease at bay. We would not however be understood to say, that confidence is a never failing shield, but we would impress upon the attention of the reader, that the state of the mind produces a more powerful effect upon the system, than almost any other one cause. It is probably well known to all, that an old man named Stephen Ayres, or the "Cholera doctor," as he was more popularly called, has wrought miracles among the Canadian population. Clothed in the garb of poverty, with unshaven beard, and leading two or three emaciated horses, he paraded through the streets of Montreal, holding out an instantaneous cure* for the pestilence. His appearance struck the superstitious fancy of the lower classes, and by restoring many imaginary cholerics, by acting on their diseased mind, he acquired an ascendancy over their ideas which nothing could shake—he was soon followed, and revered as a Saint. By his presence, and the possession of a stolen piece of his tattered garments, despondency left them; and with the full persuasion that they had ever ready at hand, a specific for the dreadful disorder they returned to their daily occupations, confidence entered their breasts, and cheerfulness gladdened their abodes.

This disease at that city, has attacked a larger proportion of the filthy emigrants and superstitious Canadians, than of the upper classes; and one of the most prominent reasons of that, in our opinion, is that they are more the subjects of superstition, personal uncleanliness and intemperance. It is true, many of the upper classes have suffered from the disease, but upon minute enquiry it was found that the fear of the malady had taken firm hold upon them, and its consequent effect upon the functions of the system had laid them more open to the action of the causes of the cholera, than would otherwise have been the case. But

* This was a mixture of charcoal, hog's lard and maple sugar, equal parts, which was exhibited by table spoons full.

there are other passions, such as anger, which though not so constant in their duration, yet in their flashes act upon the circulation and other functions of the human frame, and cause the system to respond to their tone, and become more exposed to the action of the pestilential poison. Therefore, he who wishes to avoid every possible cause, will maintain an equable and composed state of of mind.

With regard to the other non-naturals in the division of hygiene, we must remark, that here are to be found the more immediate exciting causes of the Cholera.

Intemperance holds out a most pressing invitation to an attack of this disorder, and this is a fact that drunkards will have to confirm, if this scourge prevail to any extent in our city, perhaps full two thirds of those whom this besom of atmospheric origin has already swept from off the stage of life in Canada, were addicted more or less to the frequent use of ardent liquors; and the intemperate among us cannot certainly expect a less ratio of their number to fall victims. But there is intemperance in eating, as well in drinking, and it may extend to the quantity, as well as nature of the food. There is nothing which can more contribute to an invasion of this disease, than cucumbers as they are commonly prepared with vinegar and pepper; gooseberries, currants, muskmelons, watermelons, green corn, unripe fruit, &c. The different articles of confectionary, as pies, tarts, ice creams, &c. may we think, without any injury to the alimentary canal, be denied entrance there.

Ice water drinks, we think not only unnecessary to slake the thirst, but very injurious to the tone of the stomach. When it becomes necessary to drink, we deem the addition of some good port, or any other of the wines, to be by no means inconsistent with health, and it will be found that thirst will be quenched equally well, if the person take a mouthful, and hold it there ten or fifteen seconds, swallowing it gradually, and repeating this a few times; as though at one breath, he threw into his stomach a pint of fluid.

In other respects however, we think it absolutely necessary that during the presence of this epidemic influence in our country, as little change as possible, be made in our wonted food. Let him who is accustomed to a moderate indulgence in the pleasures of the table, not too suddenly break through that established routine. If any alteration be contemplated, let it be submitted

to the judgment of the physician. For the stomach, becoming habituated to the reception of certain articles of food, which afford a stimulus to its action, will not brook a violent change without deranging every part of the system which sympathizes with it; and this derangement, breaking up the chain of resistance which the body naturally offers to sickness, of course lays it open to the invasion of disease; and as the Cholera is the one which during the prevalence of the epidemic influence, bears the greatest sway, it becomes probable that he who makes the sudden and great change in his diet (and we may add in the quantity of his exercise and sleep,) will be in imminent danger of an attack of this dreadful disorder.

With regard to dress, we would recommend the application of a thin flannel roller about the abdomen, and woollen to the feet; by these means, we will retain the action to the surface, which might in the absence of such external excitement, be directed to the internal organs. In other respects, we should dress to suit the temperature By the frequent change of our linen, and the use of the bath and flesh brush, we will excite the perspiratory functions, and thus aid nature in the course she naturally takes to ward off the injurious effects of heat &c., and promote a considerable item in favour of health, cleanliness. Most of the Canadians and Emigrants whom we observed labouring under the symptoms of Cholera in the British provinces, were very uncleanly in their skins. We saw a female who had not washed herself for six weeks, nor changed her clothes during the whole of that period, and in whom consequently, perspiration was much interrupted, seized with the Cholera—she died in a few hours. How far the want of cleanliness contributed to her death, we cannot say; but that it impeded the perspiration which was necessary to her health previous to her attack, we cannot doubt.

But still, act as we will, with all our precautions, we cannot expect with certainty to remain in the possession of perfect health; by the adoption of the above mentioned means however, we will be conscious, that we have done all that lies in our power, to ward off the evil.

It is a fact well authenticated, not only by the observations of European writers, but also by the concurrent testimony of all who have been within the sphere of this epidemic influence, (not even excepting ourselves) that all who respired the air of the choleric regions, experienced some effect of this pestilential

poison; but it is mostly when apprehension and self neglect are superadded to these first diseased sensations, that it becomes more serious, and passes under the name of "Asiatic Cholera."

It behooves us therefore, to be watchful of ourselves and friends, and if even the slightest derangement of the system be present, to seek advice from the proper source; for indeed not *one case* of cholera has come under our observation, or that of the medical commission, which has not been preceded by some disorder of the system, (most usually diarrhea,) sufficient to warn the sufferer of the impending evil, and in time to have adopted means, to mitigate, if not prevent the invasion of the disease.

Now, when the person first feels an unusual degree of langour, malaise, pains or a sensation of distention of the abdomen, restlessness, nausea, constipation or looseness of the bowels, thirst, or in short any other derangement which is not a concomitant of perfect health; if he fly to medical aid, he stands the best chance of escaping an attack of this deadly disease. And indeed this is important to be borne in mind, since, and I now only reiterate the words of an old and able practitioner of Montreal, a gentleman of talent, and erudition,* if, during the prevalence of this epidemic influence, people were to apply for medical assistance, the moment they begin to feel unwell, nine out of ten would be rescued from the grave: and in fact, so much was he impressed with the truth of this remark, that he said, that he had intended, if he ever met the Medical Commission from New York, to give them this advice—viz.: That if, at the same time, the physician were called to a patient who was said to be dying of cholera, he were also called to a person who was only slightly complaining, the medical man should neglect the former and fly to the latter. So necessary is it, that in every thing relating to this epidemic, we should act promptly. These observations we offer to the attention of the reader, as not being drawn from the books and our own speculation, but from what we ourselves have seen in Canada, and the most respectable and experienced medical gentlemen resident there.

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* Dr. Wm. Robertson, M. D. Hon. Mem. Mass. Med. Soc. &c.

(I.)

HEALTH OFFICER'S RETURN

Of the State of Public Health in the City of Quebec, for the Month of April, 1832.

METEOROLOGICAL TABLE.

Date.	Moon.	Thermometer.			Wind.			Atmospheric Variations.		
		7 A. M.	2 P. M.	9 P. M.	7 A. M.	2. P.M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.
1	●	4	6	2	S. W.	S. W.	S. W.	Clear	Cloudy	Clear
2		3	2	3	S. W.	S. W.	N. E.	Cloudy	Cloudy	Cloudy
3		3	1	3	N. E.	N. E.	N. E.	Snow	Snow	Cloudy
4		3	2	5	S. W.	S. W	S. W	Clear	Clear	Clear
5		8	2	5	S. W.	S. W.	S. W.	Clear	Clear	Clear
6		8	1	4	S. W.	S. W.	S. W.	Clear	Clear	Clear
7	☽	4	2	4	S. W.	S. W.	N. W.	Cloudy	Clear	Clear
8		5	1	5	N. E.	N. E	S. W.	Clear	Clear	Clear
9		9	1	2	S. W.	S. W.	S. W.	Clear	Clear	Clear
10		3	6	2	S. W.	S. W.	S. W	Clear	Clear	Clear
11		4	8	3	S. W.	S. W.	S. W	Clear	Clear	Cloudy
12		4	11	4	S. W.	S W.	S W.	Clear	Clear	Clear
13		2	2	1	N. E.	N. E	N. E.	Cloudy	Cloudy	Cloudy
14	☉	0	1	0	N. E.	N. E.	N. E.	Cloudy	Clear	Clear
15		0	3	0	N. E.	N. E.	N. E.	Clear	Clear	Clear
16		0	2	0	N. E	N. E.	N. E	Cloudy	Cloudy	Snow
17		0	2	0	N. E.	N. E.	N. E	Snow	Snow	Snow
18		0	3	0	N. E.	N. E.	N. E.	Cloudy	Clear	Cloudy
19		0	5	3	N. E.	N. E.	N. E.	Clear	Cloudy	Cloudy
20		1	3	1	N. E.	N. E.	N. E.	Cloudy	Clear	Cloudy
21		1	3	1	N. E.	N. E.	N. W.	Clear	Clear	Clear
22	☾	3	1	6	N. W.	N. W.	N. W.	Clear	Clear	Clear
23		6	1	2	S W.	S. W	S. W.	Clear	Clear	Clear
24		3	1	0	S. W.	S. W.	S. W.	Clear	Clear	Clear
25		1	2	2	N. W.	N. W.	N. E.	Snow	Cloudy	Cloudy
26		1	2	0	N. E.	N. E.	N. W.	Cloudy	Rain	Rain
27		2	5	1	S. W.	S. W.	S W.	Clear	Clear	Clear
28		1	4	3	N. E.	N. E.	N. E.	Clear	Clear	Clear
29		5	9	3	S. W.	S. W.	S. W.	Clear	Clear	Clear
30	●	2	1½	1	N. E.	N. E.	N. E	Cloudy	Clear	Cloudy

Appendix I continued.

HEALTH OFFICER'S RETURN

Of the State of Public Health in the City of Quebec, for the Month of May, 1832.

METEOROLOGICAL TABLE.

Date.	Moon.	Thermometer.			Wind.			Atmospheric Variations.		
		7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.
1		1	1	1	N. E.	N. E.	N. E.	Snow	Snow	Snow
2		2	4	3	N. E.	S. E.	S. W.	Cloudy	Cloudy	Clear
3		4	8	3	S. W.	S. W.	S. W.	Cloudy	Clear	Clear
4		3	4	3	N. E.	N. E.	N. E.	Clear	Cloudy	Rain
5		4	6	4	N. E.	N. E.	N. E.	Clear	Clear	Clear
6		4	10	4	S. W.	S. W.	N. E.	Clear	Clear	Clear
7	☽	5	11	4	N. E.	N. E.	N. E.	Clear	Clear	Clear
8		8	15	8	N. E.	S. E.	S. E.	Clear	Cloudy	Cloudy
9		11	15	9	S. W.	S. W.	S. W	Clear	Clear	Clear
10		10	15	10	N. E.	N. E.	N. E.	Clear	Clear	Clear
11		10	20	9	S. W.	S. W.	S. W.	Clear	Clear	Clear
12		12	21	12	S. W	S. W	N. E.	Clear	Clear	Clear
13		7	9	6	N. E.	N. E	N. E.	Clear	Clear	Clear
14	☉	8	10	5	N. E.	N. E	N. E.	Cloudy	Cloudy	Cloudy
15		6	10	4	N. E	N. E.	N. E.	Clear	Cloudy	Rain
16		4	11	4½	N. E.	N. E	N E.	Rain	Cloudy	Cloudy
17		7	11	6	N. E.	N. E	N. E.	Cloudy	Clear	Clear
18		6	9	5	N. E.	N. E.	N. E.	Clear	Cloudy	Clear
19		5	7	6	N. E.	N. E	N E.	Cloudy	Cloudy	Rain
20		5	8	6	N. E	N. E.	N. E	Rain	Cloudy	Rain
21		5	4½	3	N. E.	N. E.	N. E	Rain	Rain	Cloudy
22	☾	4	6	3	N. E.	N. E.	N. E	Cloudy	Cloudy	Clear
23		5	10	5	N. E.	N. E.	N. E.	Clear	Clear	Clear
24		6	11	6½	N. E.	S. E.	N. E.	Clear	Clear	Clear
25		7	12	8	N. E.	N. E.	N. E.	Cloudy	Cloudy	Cloudy
26		5	7	5	N. E.	N. E.	N. E.	Cloudy	Cloudy	Cloudy
27		4	9½	6	N. E.	N. E.	N. E.	Cloudy	Clear	Clear
28		7	16	11	S. E.	S. E.	S. E	Clear	Clear	Clear
29	●	10	17	13	S. E.	S. E.	S. E.	Clear	Clear	Clear
30		10½	9	8	N. E.	N. E	N. E.	Cloudy	Cloudy	Clear
31		11	18	12	S. E.	S. E.	N. E.	Clear	Clear	Clear

Appendix I continued.

HEALTH OFFICER'S RETURN

Of the State of Public Health in the City of Quebec, for the Month of June, 1832.

METEOROLOGICAL TABLE.

Date.	Moon.	THERMOMETER.			WIND.			ATMOSPHERIC VARIATIONS.		
		7 A. M	2 P. M	9 P. M.	7 A. M.	2 P M	9 P. M.	7 A. M.	2 P. M.	9 P. M.
1		10	18	7½	N. E.	N. W	N. E.	Clear	Clear	Clear
2		8	11	5½	N. E.	N. E.	N. E.	Cloudy	Cloudy	Cloudy
3		5	8	5	N. E.	N. E	N. E	Cloudy	Cloudy	Cloudy
4		6	10	6½	N. E.	N. E.	N. E	Cloudy	Cloudy	Cloudy
5	☽	6	8	6½	N. E.	N. E.	N. E.	Cloudy	Cloudy	Rain
6		7	10	8	N. E.	N. E.	N. E.	Cloudy	Cloudy	Cloudy
7		9	14	8	N. E.	N. E.	N. E.	Cloudy	Clear	Clear
8		10	15	9	N. E.	N. E.	N. E.	Cloudy	Clear	Clear
9		9	18	11	N. E.	S. W.	S. W.	Clear	Cloudy	Clear
10		13	20	15	N. E.	S. W.	S. W.	Clear	Clear	Clear
11		16	23	16	S. W	S. W	S. W.	Cloudy	Clear	Clear
12		13	17	9	N. E.	S. W	N. E.	Cloudy	Clear	Clear
13	☉	9	16	12½	N. W	S. W	N. E.	Clear	Clear	Clear
14		12	22	10	S. W.	S. W	N. E.	Clear	Clear	Rain
15		10	22	8	N. E.	N. E	N. E.	Cloudy	Clear	Rain
16		14	22	17½	N. E	S. W	S. W.	Cloudy	Clear	Clear
17		8	8	7½	N. E.	N. E.	N. E.	Rain	Rain	Cloudy
18		10	12	8	S. W.	S. W.	S. W.	Cloudy	Clear	Clear
19		8	10	8	S. W.	N.	S. W.	Clear	Cloudy	Cloudy
20		9½	18	8	S. W.	S. W.	S. W	Clear	Clear	Clear
21	☾	12	22	15	S. W.	S. W	S. W.	Clear	Clear	Clear
22		16	22	18	S. W.	S. W.	S. W	Clear	Clear	Clear
23		14½	20	10	S. W.	S. W.	S. W.	Clear	Clear	Clear
24		9	18	11½	S. W.	S. W.	S. W.	Clear	Clear	Rain
25		11	17		N. E.	N. E.		Cloudy	Cloudy	

(K.)

SCHEDULE

Of Daily Returns of Cases and Deaths of Asiatic Cholera, in the Hospitals of Quebec, from the 8th to the 25th of June, 1832.

DATE.	REMAINING FROM LAST REPORT.	ADMISSIONS SINCE LAST REPORT.	CONVALESCENTS.	DISCHARGED CURED.	DEAD.	REMAINING.	TOTAL. OF ADMISSIONS.	TOTAL. OF DEATHS.
8th	none	3	none	none	2	1	3	2
9th	1	13	none	none	6	8	16	8
10th	8	10	none	none	11	7	26	19
11th	7	13	none	none	11	9	39	30
12th	9	27	none	none	13	23	66	43
13th	23	77	9	none	40	60	143	83
14th	60	48	8	none	41	67	191	124
15th	67	68	17	2	37	96	259	161
16th	96	98	31	3	36	155	357	197
17th	155	47	62	5	37	160	404	234
18th	160	46	57	2	23	181	450	257
19th	181	62	46	12	32	199	512	289
20th	199	60	44	20	40	189	572	329
21st	189	37	46	6	32	198	609	361
22d	198	31	31	15	26	188	640	387
23d	188	18	35	14	16	175	658	403
24th	175	16	71	10	16	165	674	419
25th	165	20	66	10	10	165	694	429

(L.)

Memorandum of Burials in the city of Quebec, during the years ending the 31st December, 1829, 1830, and 1831.

	1829.	1830.	1831.
Church of Notre Dame, - -	745	535	790
Do. St. Roc, - - -	130	305	316
Hospital of Hotel Dieu, - -	31	32	42
General Hospital, - - -	9	5	6
Episcopalians, - - - -	188	243	382
Presbyterians, - - - -	80	88	152
Saint John's Chapel, - - -	00	00	17
Military, - - - - -	44	57	61
Totals, - - - - -	1227	1265	1766

Number of Burials from the 10th to the 21st June, 1832.

Protestant Burial Ground, - - - - - - -	266
Saint Roc, - - - - - - - -	133
Notre Dame, - - - - - - - -	560*
	959

* About 560, the official return from the Curé of the parish has not been received.

(M.)

Sir.—We the undersigned, appointed by the Common Councils of the Cities of New-York and Albany, to investigate the origin and treatment of the prevailing epidemic, beg leave, through you, to submit the following questions to the Medical Gentlemen of this place.

1. What was the state of the Thermometer, Barometer and Winds before the appearance and during the prevalence of the Cholera ?

2. Did any occupations appear to be exempt from the disease, or did it appear to be influenced by age, sex or temperament ?

3. What manufactures dispose to the disease, and do situations such as marshes, banks of rivers, &c. have any effect upon it ?

4. Mention the time and place of the first case to which you were called.

5. Did the disease usually commence with the same symptoms, and which was the most characteristic?

6. Can the origin of the disease be distinctly traced to the emigrants, and what was the proportion between them and the inhabitants?

7. Do you believe the disease to be imported or indigenous. In what districts of the city and among what class of persons did the disease at first appear to prevail?

8. What remedies have you employed, and which have you found most serviceable?

9. What is the duration of the disease, and in how many instances in your practice has it proved fatal?

10. What are the appearances which have been observed on dissection?

11. Do you consider the disease contagious, and on what grounds do you base your conclusions?

12. What effect has been observed from the firing of cannon, burning of tar barrels, and other means of purifications?

J. R. RHINELANDER, M. D.
JAMES E. DE KAY, M. D.

(N.)

Board of Health, Quebec, June 24th, 1832.

Doctors Rhinelander and De Kay were introduced to the Board by Dr. Skey, as members of a Commission authorized by the State of New-York, to proceed to Quebec to make inquiry relative to the Asiatic Cholera; these gentlemen having brought a letter to this effect, addressed to his Lordship the Governor-in-Chief.

Resolved.—That this Board invite the members of the Commission to join in this sitting, and that this Board offer to them all the aid in their power towards effecting their object.

Resolved.—That the Civil Hospitals be opened to them at all times, that the Health Commissioner, the resident Physicians, and the prescribing Officers of the Hospitals, be instructed to afford them all the information in their power; and that the Secretary

of this Board be instructed to furnish the Commission with all such printed documents as have been published by the Board.

Resolved.—That the Health Commissioner, the resident Physicians, the Health Officer, and Dr. Lyons, be called on to make statements of such facts as may have come to their knowledge respectively, respecting the knowledge and treatment of the Asiatic Cholera in this city, and that they be requested to make their communications before noon to-morrow.

Board of Health, Quebec, June 25th, 1832.

The following Report was read :—

The undersigned appointed by the Board of Health to investigate and report upon the introduction and treatment of the Cholera now existing in this country, have agreed to the following report, which they respectfully submit :—

The disease on its first appearance in this city, exhibited all the characters of that commonly called the Asiatic or Spasmodic Cholera. It commenced about the 8th inst. in boarding houses and taverns in the Cul-de-Sac, a low, uncleanly and ill ventilated part of the city, crowded with emigrants of the lowest description, with sailors, and other persons of irregular habits.

About the fourth day of the disease, (the 12th) it showed itself in the more elevated parts of the city, among the wealthier classes of society, and persons of sober and regular habits, who could have had but little, if any, direct communication with the people among whom the disease had first appeared.

About the same date, (the 12th) the disease was observed in various parts of the city, and in several neighbouring Parishes, some few miles distant, having a constant intercourse with it.

The cases continued to increase in number until about the 16th or 18th, (being the 8th or 10th day of the disease,) when they began to subside both in number and violence, the disease still prevailing more extensively in the ill ventilated parts of the city above mentioned. About the period of its greatest prevalence, (the 8th or 10th day of the disease,) the number of cases were estimated to be between two hundred and fifty and three hundred in the course of twenty-four hours.

The undersigned have not as yet been able to discover that any case of cholera has been landed from any vessel in the

harbour before, nor until several days after its first appearance in the city.

They deem it necessary to add, that some Parishes in the neighbourhood of Quebec have continued free from the disease until lately, and that no case appears to have yet occurred at Three Rivers, an intermediate and populous town between Montreal and Quebec, where the steam-boats with emigrants from Quebec generally touch.

Since the appearance of this malady, only two soldiers have been attacked in Quebec, and those while on duty; the rest being closely confined to their quarters.

The symptoms were the most violent at the commencement, and continued so until about the 16th or 18th, when they began to mitigate in severity as the cases diminished in number.

In the treatment of this disease, recourse has been had to almost every remedy favourably reported of by European practitioners, and they all have had for a time their advocates; some preferring stimulants, others opiates, while others satisfied themselves with an intermediate plan of treatment.

The whole of the medical practitioners, with one accord, agreed however in the application of external stimulants, such as oil of turpentine, mustard, warm applications and frictions; calomel and opium, has been much relied on by many. Practitioners speak with confidence of blood letting at the onset of the disease, and before an approach to collapse has been recognized. Sweating has been much practiced, and decidedly with advantage, when collapse has not taken place. This is indicated by a pulseless wrist, dejected countenance, blue extremities, tongue and breath cold, and a sunken voice, feeling to the patient as if it passed through the ears.

Some instances have been noticed, and also observed by our intelligent clergy, as well as by ourselves, where in some mild forms of the disease, nature effected a cure by copious perspiration, encouraged by warm drinks and extra clothing.

The undersigned, with one accord, have found purgatives injurious if used before perspiration, or blood letting had been resorted to, to allay the irritable state of the stomach and bowels, and then only the milder purgatives should be employed, such as calomel, or blue pill, guarded with minute doses of opium,

and carried off after a few hours, with rhubarb combined with soda and carbonate of ammonia.

(Signed) JOS. MORRIN,
Health Commissioner.
W. A. HALL,
Resident Physician.
X. TESSIER,
Health Officer.
WM. LYONS,
Superintendant of the Emigrant Hospital.

Quebec, 25th June, 1832.

Ordered.—That the said Report be forthwith communicated to Doctors Rhinelander and De Kay.

(Certified.) WM. ROSS,
Ass. Sec'y Board of Health, Quebec.

(O.)

The Board of Health issued last evening an amended report of the cases which have occurred since the first appearance of the disease on the 10th ; which is as follows.

	Cases.	*Deaths.*
From the 10th to the 15th, - -	1328	175
16th, - -	381	86
17th, - -	474	102
18th, - -	261	128
19th, - -	337	149
20th, - -	165	94
21st, - -	151	76
22d, - -	109	52
23d, - -	83	31
24th, - -	51	21
25th, - -	44	33
26th, - -	27	23
	3411	970

The number of burials in the Protestant grounds to Saturday, at 1 P M. was 283, of these, 90 were residents, 140 strangers or emigrants, and 53 whose names, sex, or residence, are unknown.

The following statement will show the number of burials in the same grounds during the summer seasons of the last four years, and point out the comparative mortality of these months.

	1828.	1829.	1830.	1831.
June, -	33	25	22	60
July, -	23	33	50	79
August, -	33	46	58	68
September,	25	20	29	51
	114	124	159	258

The burials at the Catholic ground, amount to 644 up to Monday afternoon. This is of *all* diseases, and the clerk of the ground tells me that not more than 500 or 520, are attributable to cholera.

I suppose about 50 to 70 have been buried on the Common of St. Anne, near the Emigrant *Shed*.