

prevailed to Dublin. Early in April a vessel, named the "Carrieks," sailed from Dublin, with 167 emigrants. Ten days after her departure one death took place, and during the succeeding fifteen days thirty-nine more were added. From this time up to the arrival of the vessel at Grosse Isle quarantine station, only five more deaths occurred. The captain reported to the landing officer "forty-four deaths, by some unknown disease." The real nature of this "unknown disease" no sane person now calls in question, nor indeed perhaps even then did any disinterested parties decline to admit it. The Carrieks arrived at Grosse Isle on the 3rd of June (1832), and while anchored there a female passenger died after three hours illness. On 7th of June a sailor died of cholera in a boarding house in Quebec; and on that evening the steamer *Voyageur*, (not the *Swiftsure*, as stated recently by a writer in the *Mail*, for this steamer had then passed out of existence,) left Quebec for Montreal; but in consequence of being overboarded with emigrants, the captain was obliged to put back, and to disembark a number of them. Several of the disembarked were very soon after seized with cholera. The steamer proceeded on her way to Montreal; but before arriving at Three Rivers, an emigrant named Carr was taken ill, and he died before the vessel came into the port of Montreal. Within the last four years I learned from the late John Carr, Harbour Master of Toronto, and for many years an alderman of the city, that the man Carr, here mentioned, was his brother. He came from the same parish as myself, near to Belfast. Another emigrant named McKee had been seized in the afternoon of the same day (June 9th); he was carried from the steamer into a tavern on the wharf. The dead body of Carr was exposed to public gaze during the next day (Sunday 10th), and, as I well know, was visited by many persons, from mere curiosity. Numbers also went into the tavern to see McKee—among others a soldier of the 15th Regiment, then stationed in Montreal. Cholera appeared in the barracks that night, and this soldier was its first victim.

On the night of Sunday, or the early morning of Monday, several cases appeared in various parts of the city. It was then for the first time I saw the disease, and it was impossible to avoid the conviction that it was new to Canada, though some physicians, for reason best understood by themselves, alleged that it was not new to them; but we all have met with wise men whose brains are too densely packed with wondrous facts to leave any vacant space for the entrance of new ones. On the 11th several other cases occurred, and a continued increase took place until the 19th, when the pestilence seemed to have attained its acme. From Montreal I traced the disease along the travelling routes westward and southward. It appeared at Lac-chauc on the 11th of June, among emigrants on their way to Upper Canada; on 13th it was at the Cascades—the first case being that of a person newly arrived from Montreal. On the same day a boatman, direct from Montreal, died of cholera at Cornwall. On 16th it was at Prescott—the first cases were among persons just arrived from Montreal. On 19th a boatman from Montreal died of cholera at Brockville. On 20th it was at Kingston. On 21st the first decided cases occurred in York, (now Toronto.) On the 22nd a vessel from Kingston, called the "Massachusetts," loaded with emigrants, arrived in the river below Niagara, but as there were several cases of cholera on board, the vessel was not permitted to come into port. Cholera did not at that time show itself in Niagara.

Having thus followed the disease far enough westward, we may next endeavour to trace it towards the south. But on account of the obstacles offered to emigrants on the American frontiers, the progress of the disease in this direction was neither so regular nor so rapid as it was in passing up the St. Lawrence. We find it in Laprairie on 12th June, and in St. Johns on 14th. Straggling cases occurred in several places on the frontier; but whether from the difficulty of ascertaining, or of writing, truth, the accounts of its appearance published were so confused and contradictory as to render it impossible to follow it with any degree of satisfaction. The disease was reported in New York on July 4th; but some cases were said to have been observed previously—a very usual sort of afterthought with the *nil admirari* variety of observers. The first case in Philadelphia was by some stated to have occurred on 5th July; but as a second one was not reported until the 14th, we may doubt the reality of that reported on the 5th; for it would be an anomaly, perhaps never observed in the progress of cholera, that nine days should elapse from its arrival, in a large and populous city, in the heat of July, without a second case soon following. From New York and Philadelphia the disease passed into various surrounding States, and before the close of the year it had traversed almost the entire face of the northern continent. In Montreal it continued to rage with terrifying violence till the end of June. I remember one day on which the deaths exceeded 150. In the beginning of July it remitted in violence, but the scene of devastation was truly awful. Hundreds had been left without parents and without sustenance; death had been in almost every house. No wonder that a beam of hope gladdened our sorrowing hearts, as we flattered ourselves that the fury of the storm was past. But we were doomed to sad disappointment, for before the middle of July the disease seemed to reawaken with augmented vigour. Hitherto its victims had been principally from among the poor, and

the upper ranks had flattered themselves on a happy exemption from its ravages; by many of them the disease was spoken of as "*phibetia* in its habits." They were mistaken—death's carnival was not yet complete—his devastations now passed beyond the habitations of the poor and the houseless.

A remarkable instance of the transmission of the disease to the northward of Montreal, took place about this time. The settlement of New Glasgow, about 30 miles north west of the city, had imposed upon itself a sanitary cordon, and none of its residents ventured from home, until about the close of July, when a man named Young made the venture. On returning to his home he had much to tell of his city observance, and among his details he related the fact, that in the inn in which he lodged, he saw and rubbed a patient who was dying of the cholera, and he "was not a bit afraid of it." Next day this brave man himself died of the disease. Two or three neighbours buried him quietly in his own garden. No other case in the settlement followed,—so much for prompt isolation.

After the beginning of September but few cases occurred in Montreal, yet one or two appeared so late as the end of October, and it was a somewhat strange fact that among the latest deaths was that of the undertaker who had confined and conveyed to the graveyard nearly all the victims belonging to the protestant denominations. The apothecary and the matron of the General Hospital were both carried off shortly after the casual admission of some cases into that institution,—on one of which the process of venous injection of a solution of minute of soda was effected, with wondrous apparent benefit. The man seemed to revive as if by magic. Heat of body returned; the pulse resumed its normal force and rhythm; the husky voice gave place to distinct articulation, and all seemed to promise escape; but the illusion was soon dispelled,—the poor fellow died not many hours after.

It was in the midst of the July horrors that a very strange personage presented himself on the streets of Montreal, calling himself the "*Cholera Doctor*," and asserting his curative potency over the disease. His name was Stephen Ayres. He was attired in the grandeur of a sear-crow; his outer garment had once been a great coat; but it now seemed to be the relics of a dozen, the lacerated tails of which he had knotted into distinct hanks. He said he had come from the far west, expressly to do battle with the pestilence. To give prestige to his advent he was followed by an old brood mare, and she had a train of two colts of the respective ages of one and two years. Stephen went fearlessly into every part of the city, and he had many more followers than his three quadrupeds. I saw him, in rather a clouded aspect, at the bedside of the Hospital matron an hour or so before her death. He had administered to her his cure—a mixture of hog's lard and charcoal; but it did not save poor Mrs. Stevenson. Of course Stephen, like many other knight of the mount, said he was not "called in time." He disappeared, but not as did the majority of his patients, for he was afterwards visible in other parts.

The total number of deaths in Montreal, from the incursion of the disease till its cessation, was upwards of 3,000. Of these, 2,000 were ascribed to the cholera, but as this calculation would assign 1,600 to all other diseases, for a period of, say, one-fourth of a year, and the whole population was then about 30,000, it is manifest that the proportion given to cholera was much too low. I feel satisfied that 2,500 to cholera, and 500 to all other diseases, would have been much nearer to the right mark. During the winter of 1832-33, cholera was followed by a very fatal form of typhus fever. Among its victims was Dr. Caldwell, and, I think, Dr. Vallée, and some medical students, as well as two or three matrons of the General Hospital.

The second invasion of Canada by Asiatic cholera, took place in June, 1834, which was a month earlier in the season than the arrival of its predecessor. This disease was unquestionably introduced by emigrant vessels, and its movements were in complete accord with those of 1832. It was quite as virulent as the first pestilence, but it did not attack so large a number of persons. Perhaps this comparative immunity was explicable on the ground that the former so-called epidemic had cut off so many of the weekly and intemperate classes, and had thus deprived it of its favorite *habitués*. It was, however, my belief, that much was due to the general entertainment of more rational views of the primary cause of the disease, as well as of its secondary or predisposing causes, to which countervailing agencies may, without doubt, be added the observance of wiser hygienic rules. In 1834 we saw none of the tom-foolery that was inculcated by the *sarcots* at the seat of government, such as burning of tar barrels and firing of cannon in the public streets. One hot Saturday afternoon, in 1832, St. Paul and Notre Dame streets were treated to a series of explosions of artificial thunder, whether with the view of driving away one fear by the substitution of another, must be best known to the instructing wiseacres. It certainly did no harm to the glaziers. One of the city physicians, in reply to the question from the seat of wisdom, "What result did you observe from the firing of cannon on the streets?" briefly and most truly answered, "much broken glass."

The total number of reported deaths from cholera in Montreal in 1834, was 1,200. The highest number in one day was 70.

Canada remained exempt from cholera from 1834 till 1849, a period of 17 years. This inter-

vening period when compared with that between 1832 and 1834, is a pretty clear illustration of the absurdity of the doctrine which teaches us to expect recurrences of the malady at certain definite periods. The next invasion in 1854, was an additional proof of the fallacy; and if we add to these the fact of the possible existence of the disease in Ontario in 1866, which will be noticed further on, and its too probable future visitation in 1853 or '54, surely but very slight foundation can remain on which the cholera prophets may base their predictions. It will come to us only when it is carried to us, and it is my belief that even then its progress may be stayed, or completely arrested, by prompt isolation of the first presenting case or cases. The converse of this was woefully demonstrated in Toronto in 1849. In that year I chanced to be chairman of the City Board of Health. During the spring, cholera was threading its way up the Mississippi. I felt assured it would in due course reach us, and I urged on my colleagues the necessity of preparing some edifice for the reception and isolation of the first cases. We were permitted to erect a wooden shed on the then totally vacant lot on which St. Andrew's market now stands. We flattered ourselves that we had done well, but a quarter of a dozen of lofty magistrates residing in that region, thought otherwise, and they accordingly turned out one night and demolished our receiving house. I appealed to my colleagues of the council, begging for the re-erection and future protection of our edifice. To my great chagrin I found that their sympathies were with the demolishers, whilst I came off with their contempt. I could see but one course open to me, and I took it. I resigned my seat as an alderman, and with that, of course, my place in the Board of Health.

The cholera reached Toronto early in June. The first reported case was in a house on Scott street, in the person of a man just arrived from Buffalo or Cincinnati. There was no place of isolation to which to remove the patient. The consequence was exactly what should have been anticipated. The disease spread, and in the course of three months it carried off more than 500 citizens, of whom several were of the respectable classes. The three demolishers however escaped, and no doubt they flattered themselves they had performed a very praiseworthy act; but many a bereaved wife and husband, and many a weeping orphan might have had just cause for ascribing their calamities to the selfish apathy of the west end demolishers. Poor things! they are all gone, but their evil deed should not be buried in their graves.

In 1851, the cholera, as appears from a report in the French language, written I presume by Dr. Tache in 1866, visited Quebec, having been brought in from the United States. It would appear to have lasted only five weeks, in September and October; but 206 deaths were ascribed to it. It did not reach Upper Canada at this time.

In November, 1852, a very formidable and fatal disease broke out in the Toronto Lunatic Asylum, which had some of the characteristics of Asiatic cholera. I understood however that Dr. Widmer regarded this disease as essentially different from Asiatic cholera, though not much less fatal. If Asiatic cholera be produced by filth, irrespective of specific infection, I might readily admit the possibility of its existence at that time in the Toronto Asylum. I had shortly afterwards the odorous task of cleansing the angan-stable—ejecting mass of underlying abomination. Let any one try to imagine what must have been the hygienic condition of that edifice, nearly 600 feet in length, sitting over the accumulated dirty suds and kitchen dirtied water of four years contribution. Such was the fact, for the drains of the basement had never been connected with the main sewer running from the house to the lake. Fortunately the water-closets had independent connections of their own, else who will say how much worse the condition of the patients would have been? Will it be believed that a grand jury, presided over by a very magniloquent citizen, made a presentment within two months after the outbreak of the disease mentioned, in which they informed his lordship, the judge, and the public that they had examined the water beneath the basement, and had found it clear and scentless. In the winter of 1853-54 I caused to be removed from this same basement from 200 cartloads of very rich manure. The directors of the asylum had, in the end of 1852, sent some samples of the air of various compartments to a distinguished chemist, who did not succeed in finding anything amiss in it. This may show how very undetectable dangerous gases may be, for during the cleansing process I had not less than 50 cases of erysipelas to fight against, and I cannot but believe the dirty state of the foundation had much to do with their causation. At all events I had no more of this trouble after the place was cleansed out, and proper attention to ventilation was given.

The cholera of 1854 was introduced into Canada by way of Quebec. It was brought by a ship from Liverpool, which reached the port on 17th of June. It appeared among emigrants at Montreal on the 22nd; at Kingston on the 25th, and on the same day, as reported, at Toronto. It continued till the middle of September. In my journal under date 11th August, I find the following entry:—"Up to the present time the health of the asylum has been excellent, though cholera has been prevailing in the city for at least seven weeks, and has carried off probably four or five hundred victims." That this exemption from the disease was largely attributable to the sanitary improvements previously

effected, and to the hygienic regulations enforced under my direction, I would not dispute; but at the time I placed my chief reliance on a stringent system of prohibition of city visitation by the servants of the establishment. An addition to the monthly wages was given to all who obeyed the instruction, and any one discovered to have disobeyed was forthwith discharged; it was however very creditable to the service, that only in one instance was it necessary to enforce this penalty. The asylum continued free from the disease throughout the whole period of its prevalence in the city. The cholera shed was within a short distance of the boundary wall.

Toronto was exposed to another visitation of this disease in August, 1866, when a man arriving by rail from the United States, was found suffering under it. He was promptly removed to the General Hospital, where no doubt all proper precautions of isolation and disinfection were carried into effect. He had all the characteristic symptoms of Asiatic cholera, and he died within a few hours. It was reported that this nurse died of the disease a day or two after, but of this I had no certain information. A travelling companion of this man was stated to have died next day of cholera at Port Hope. Had the first case in 1854 been as promptly isolated as this was, who will assert that hundreds of valuable lives might not have been saved?

It seems to me a logical impossibility to study dispassionately the history of cholera visitations in Canada, and to reach any conclusion save one as to its mode of transmission from place to place, and its communication from person to person. The most strenuous advocate of the theory of contagion cannot however deny that the disease is discriminative in the selection of its victims, nor will he assert that its virulence and epidemic pervasion are not intensely aggravated by the disregard of sanitary and hygienic precautions; but what have we ever learned, in the annals of the pestilence, that proves its transmission from country to country and town to town, without the intervention of human travel or traffic?

It has kept pace with the march of armies, the advance of caravans, and the trail of Mohammedan pilgrimages; it has threaded its way along the coasts of oceans and of inland seas, up or down the valleys of rivers, and along the lines of railways; it has crossed oceans and high mountain chains, with winds abaft or ahead. It is a disease of man, and it follows man, or rather it keeps pace with him, go whither he may, when bearing with him its specific seed, dare I not now say, its specific germ? Who knows? Let us await with becoming patience the result of the practical enquiries and personal observations of the pupils of that prince of etiological scrutineers, the world-famed Pasteurs who are now pursuing their searches in the Delta of the Nile.

In the *Popular Science Monthly* for the present September, I have read, with much interest, a lecture on "*The Germ theory of Disease*," by Prof. H. Grapple, M.D., of Chicago, from which I quote the following passage:

"Thus exposed from all quarters to the attacks of these merciless invaders (bacteria, etc., etc.) it seems almost strange that we can resist their attacks to the extent that we do. In fact, one of the arguments used against the germ theory—a weak one it is true—is, that while it explains why some fall victims to the germs, it does not explain why all others do not share their fate. If all of us are threatened alike by the invisible enemies in the air we breathe, how is it that so many escape? If we expose a hundred flasks of meat-broth to the same atmosphere, they will all become tainted alike, and in the same time. But the animal body is not a dead soil in which bacteria can vegetate without disturbance. Though our blood and juices are the most perfect food the parasites require, and though the animal temperature gives them the best conditions of life, they must still struggle for their existence with the cells of the animal body. We do not yet know in what way our tissues defend themselves, but that they do resist, and often successfully, is an inevitable conclusion. We can show this resistance experimentally in some cases. The ordinary putrefaction—bacteria can thrive excellently in dead blood, but if injected into the living blood vessels the speedily perish."

MISCELLANY.

DR. DENCAN, of Wimpole street, an amateur collector of violins, has just received by purchase the instrument used by Paganini. He is also said to have possessed himself of Paganini's secret. That secret was—genius.

THE Berlin Museum has purchased for one hundred and eighty thousand francs Rembrandt's painting of "Potiphar Accusing Joseph before Pharaoh." The work was formerly in possession of Sir Thomas Lawrence, and is one of the most famous of Rembrandt's pictures.

It is well known, says the *Paris Eevening*, that the Comte de Paris published during his exile in London several works on socialism, which have acquired a certain celebrity, but have greatly displeased his relatives. It is said that the Orleans family have bought up and destroyed all the copies of these works that they could find. It is, however, less well known that the Comte de Paris was once an active member of the *Internationale*, and it is even asserted that his tardiness in openly declaring himself a pretender to the French crown is mainly due to his fear of falling a victim to the avenging arm of the revolutionary brotherhood.