

## Canadian Doctors and the Cholera

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### Article abstract

Après avoir brossé un rapide tableau de l'état de l'enseignement de la médecine au Canada au dix-neuvième siècle et avoir abordé la question des problèmes de définition des critères d'entrée dans la profession, l'article décrit l'attitude des médecins canadiens vis à vis le choléra. Il semble que les coordonnées du débat se soient inscrites autour des mêmes pôles qu'en Europe où s'opposaient ceux qui croyaient que le choléra était le produit d'une épidémie et ceux qui arguaient qu'il était propagé par contagion. Les traitements eux-mêmes semblaient peu différer de ceux qui étaient donnés en Europe. La réaction du public devant la confusion démontrée au cours du débat et la brutalité des traitements semblent leur avoir causé autant de tort qu'en Europe. Ainsi la concurrence demeura forte avec les praticiens clandestins qui offraient des modes de traitement moins barbares afin de mieux plaire à la clientèle. Le combat de la profession médicale contre le choléra a joué un rôle important dans l'acquisition d'une crédibilité professionnelle auprès du public.

**G. BILSON**

*Précis*

Après avoir brossé un rapide tableau de l'état de l'enseignement de la médecine au Canada au dix-neuvième siècle et avoir abordé la question des problèmes de définition des critères d'entrée dans la profession, l'article décrit l'attitude des médecins canadiens vis à vis le choléra. Il semble que les coordonnées du débat se soient inscrites autour des mêmes pôles qu'en Europe où s'opposaient ceux qui croyaient que le choléra était le produit d'une épidémie et ceux qui arguaient qu'il était propagé par contagion. Les traitements eux-mêmes semblaient peu différer de ceux qui étaient donnés en Europe. La réaction du public devant la confusion démontrée au cours du débat et la brutalité des traitements semblent leur avoir causé autant de tort qu'en Europe. Ainsi la concurrence demeura forte avec les praticiens clandestins qui offraient des modes de traitement moins barbares afin de mieux plaire à la clientèle. Le combat de la profession médicale contre le choléra a joué un rôle important dans l'acquisition d'une crédibilité professionnelle auprès du public.

## *Canadian Doctors and the Cholera*

Cholera ravaged Europe and North America at intervals during the middle years of the nineteenth century. There were major epidemics in Canada in 1832 and 1834 and again in 1849 and 1854 and minor outbreaks in the early 1850s. The disease was a terrible one, which struck very hard at the poor where they were crowded together in filthy cities. The cholera raised questions about the nature of disease, about public health and sanitation and about the need for international cooperation for health needs. Doctors had no convincing explanations about cholera and no effective cures for it and the efforts of government to deal with the disease took place against a background of fear that could erupt into riot or rebellion in the right circumstances.<sup>1</sup> Cholera demanded attention and it stimulated action in many European countries.

It is now known that cholera is caused by the cholera vibrio which enters the human body through the mouth and multiplies rapidly in the intestines. In patients severely affected the disease causes a massive purging of fluid which dehydrates the body and upsets its chemical balance. As it progresses, the patient suffers severe cramps in his intestines and limbs, the body becomes cadaverous and turns blue. The patient's blood grows thick, his bodily processes slow and fail and without treatment over half the victims severely affected will die. Nowadays, the patient is treated with antibiotics and intravenous infusions of fluid. Rigorous hygiene, clean water supplies and efficient sewage disposal are the best defences against the disease which still claims most of its victims amongst those denied these benefits.

The way in which cholera spreads and is carried raises difficulties for public health officials in the twentieth century. Cholera can be carried by people who give no indication that they have the disease and these apparently healthy carriers play a large role in spreading the disease. During an epidemic, many victims have the disease in a mild form indistinguishable from a minor upset and they can effectively spread the disease by contaminating water supplies. The large number of subclinical cases help to maintain cholera even when the epidemic appears to have subsided.<sup>2</sup> The disease is still not fully understood at the present time.

In the nineteenth century, cholera baffled the doctors.<sup>3</sup> It fitted no known pattern of contagion, people in contact with victims were often left unscathed,

the disease could break out apparently simultaneously in widely separated parts of a town. For these reasons, many doctors argued that cholera was epidemic — that it occurred where particular conditions of soil, climate, atmosphere and exhalations from filth or stagnant water produced an epidemic atmosphere. People who for one reason or another had predisposed themselves to the disease, by intemperance, by fear, by immoderate diet, by fatigue, by getting too hot or cold fell ill. In 1851, the British delegation at the first international sanitary conference denied that cholera was contagious and insisted that it was epidemic.

At the same time, there were those doctors who looked for a specific cause of the disease and for a mechanism by which it spread which would answer the questions that non-contagionists raised. In England, William Budd and John Snow postulated in the late 1840s and early 1850s that water supplies infected by some matter from the discharges of cholera victims spread the disease. In Italy in 1854, Filippo Pacini of Florence described the cholera vibrio which he had seen through his microscope and suggested the way in which the vibrio multiplied and later suggested that fluid loss was the cause of death. By 1854, the nature of the disease and its mode of transmission were understood but few members of the profession accepted the explanations of Pacini and Snow. They continued to argue for a greater or lesser degree of contagiousness, and to put the major emphasis on the atmosphere as the agency for spreading the disease. In 1859, the British delegation at an international conference argued that cholera was not contagious and should be removed from the list of diseases requiring regulation.

Not until the idea that a specific germ could cause a particular disease began to dominate the profession would the work of Snow and Pacini come to seem overwhelmingly convincing. The germ theory was merely one among a number of explanations in the 1860s and without the technical skill that microscopic study demands, the germ theory was not absolutely convincing. It had to take its place amongst theories which suggested that disease was a process of fermentation or a product of miasma or produced by spontaneous generation.<sup>4</sup> When Robert Koch isolated and cultured the cholera vibrio in 1885 he swung most of the profession behind the germ theory but many remained unconvinced that the vibrio could cause the disease without specific atmospheric conditions which made the vibrio poisonous. To prove this point, Max von Pettenkoffer drank a tumblerful of water laced with the cholera vibrios. Much was invested in the opposition to germ theory. Efforts to clean up the cities were justified by warnings of the danger of miasma and effluvia, warnings which might lose their effect if germs were the explanation. A disease spread by germs and human contact might be stopped by quarantine, but trading nations did not welcome quarantine. The idea of contagion produced fear and panic, leaving the victims without aid and threatening social order. With these disadvantages, the germ theory needed very convincing evidence to win over the profession and for the years in which cholera visited Canada, the debate was unresolved.

Doctors, for the most part, were practical men concerned with making a living. When cholera attacked their patients they could not simply say that it was

a strange disease about which they could do nothing, although that was the truth, but were forced to do something about it. There opened the "grotesque chapter" of cholera therapy, which has been described as "a form of benevolent homicide". The therapy included bleeding and huge doses of calomel (a preparation of mercury) and opium. Physical treatments were often brutal and included cauterisation of the spine and blisters by cantherides or boiling water applied to the stomach. Anything seemed worth trying, including electric shocks and intravenous injections of various liquids. The injections were normally confined to the most desperately ill and were usually fatal. The only advance in therapy in the century was that the most brutal treatments were gradually abandoned.<sup>5</sup> One consequence of the grotesque therapy, which was part of the usual range of therapies applied to disease, was that people began to abandon the regular medical men and turn to those who offered less daunting regimens. They turned to Thomsonians, who practised a form of medicine based on formulae of plants devised by Samuel Thompson or they turned to homeopathic doctors who used minute doses of drugs heavily diluted. These may not have cured, but they did little harm. In the cholera years in the United States, Thomsonians made great gains at the expense of the regular medical men.<sup>6</sup>

#### *The Canadian Medical Profession*

During the cholera years in Canada, the medical profession was forming itself with difficulty against opposition and in the face of internal divisions. The chief means by which regular doctors sought to make theirs an exclusive profession were education, examination and licensing. Some of the major efforts toward achieving professional standing were made between the early 1830s and the later 1860s, but they were made at a time when the doctors were losing public esteem. At the beginning of the period the regular doctors were trained by apprenticeship and by study at a medical school, usually outside Canada, where part of the training included work on a hospital ward.<sup>7</sup> In both Lower and Upper Canada, doctors trained in medical schools demanded that schools be established in Canada. Their motives were mixed. The normal pattern by which a school was established was that a group of doctors (or occasionally a single doctor) would begin to teach classes in medicine and attempt to introduce their students into a hospital with which they had an affiliation. In this way for example Dr. William Caldwell and his colleagues established the Montreal Medical Institution in 1823, Dr. Charles-Jacques Fremont and his colleagues established the Ecole de Médecine de Québec in 1845 and Dr. John Rolph set up his own school in Toronto in the early 1830s which became the Toronto School of Medicine on his return from exile in 1843. The schools were set up because their founders wanted to teach medicine on lines that they approved. In Montreal, French doctors resented English domination of medical education and established their own schools. For some, it was a source of income, and John Rolph seems to have used his political influence to protect his school from competition by the University of Toronto in 1852. A degree of public support came from those who wanted Canadian doctors to be trained in Canada. In Upper Canada there was much fear, expressed by John Strachan and by members of the profes-

sion that without a medical school in the province, too many young men were going to United States schools, where they were inadequately trained and exposed to democratical principles.<sup>8</sup> Unlike the United States, where medical schools became commercial operations and lowered standards of entry in their pursuit of students<sup>9</sup> those in Canada sought affiliation with universities and maintained high standards of entry. Entry requirements usually included Latin, and a university degree in medicine was thought sufficient qualification to practice. One purpose of the education was to produce gentlemen, who would raise the tone of the profession and make it clearly superior.

In the mid-century, students at a Canadian medical school attended lectures on *Materia Medica* and therapeutics, Anatomy and Physiology, Principles and Practice of Medicine, Principles and Practice of Surgery, Midwifery and the Diseases of Women and Children and Medical Jurisprudence. In some schools they attended lectures on Chemistry. They spent more or less time at a hospital, according to the connexion that their school had with an institution. In anatomy, the students dissected, usually under the guidance of a demonstrator rather than the professor; in some schools, such as Laval after 1862, they might be offered the chance to use the microscope in anatomy but there was little laboratory work.<sup>10</sup> By the early 1870s, McGill was said to be the best medical school north of Philadelphia. William Osler went there from Toronto, and found a strong emphasis on work in the wards, but little difference in education from what had been set up forty years before. Not until Osler returned from Europe to take a chair at McGill in the mid-1870s would the European medical science based on laboratory work and the microscope be introduced at McGill with the help of a batch of microscopes which Osler had shipped to Montreal.<sup>11</sup> It was at the same time that McGill first began to offer lectures on public health to its students. Medical schools in Canada did not produce graduates likely to contribute to medical advance.

The Medical School and the university were institutions which could define the profession, but while many members had not been educated in that way, licensing offered a method of defining the profession. The struggle over universities and over licensing and regulating the medical profession gives some clues to public attitudes to doctors in Canada. From the late eighteenth century there were efforts to license medical practitioners by boards of examiners. In Lower Canada these efforts to define who should be in the profession produced tension between French and English doctors in 1831 and again in 1846. Proposals to form a College of Physicians and Surgeons of Lower Canada provoked bitterness until the moderate French and English doctors agreed to form the College, for fear that if they did not get together eclectics and irregular physicians would gain legal standing.<sup>12</sup> In Upper Canada, the profession had less success in making itself exclusive. Efforts to set rigorous standards of admission to the practice of medicine failed in the early nineteenth century because they were impractical. When the medical men proposed that they be allowed to form a corporation to regulate themselves, as the lawyers had done, the proposal was rejected in the early 1830s. A College of Physicians and Surgeons was set up in

1839 but the legislation was disallowed by the Imperial Government for infringing the liberties of the Royal College of Surgeons of London. In 1869, the Ontario Medical Act defined medical practitioners and included homeopaths and eclecticists against whom regular doctors had been waging a long campaign.<sup>13</sup>

The public was not as convinced as were the regular doctors of the need for limited entry to the profession. In the 1850s a medical journal complained that Upper Canada was flooded with “a horde of root doctors, steamers and quacks” who divided “with the regularly qualified physicians the scanty subsistence the neighbourhood is capable of affording” by “ingratiating themselves into the good opinions of the farmers and country shopkeepers, and descend(ing) to familiarities with the lower classes, to which educated gentlemen cannot stoop and soon the latter finds his ignorant and low competitor is preferred to himself, or at least divides pretty equally, public confidence . . .”<sup>14</sup>

The quotation suggests something of the complex of attitudes which were present among the regular doctors — a fear of declining scientific standards, uncertain social standing and too effective competition for the health care dollar. It also points to the reality of medical practice in mid-century Upper Canada — that many people chose irregular practitioners because they preferred them and because there was no social or scientific reason for choosing regulars. In all parts of Canada people gave work to unlicensed and irregular practitioners until the late 1860s and beyond. It must have been especially galling for doctors to be told by the Crown lawyers in Britain that corporate or collegiate organization would “have a tendency to establish a monopoly which might be found highly injurious to the inhabitants of the Province . . .” and by the lawyers in Upper Canada that medicine should be a trade open to all, with the law the remedy against error.<sup>15</sup> On the other hand, when the medical faculty of the University of Toronto was abolished by the legislature in 1852, it was done on the grounds that the public should not finance education for men entering such lucrative professions as medicine. Thus, doctors found themselves in low public esteem with their claims to professionalism not widely respected even while their profession was regarded as lucrative.

The regular doctors were not well placed to command public confidence on any question and regular doctors made efforts in the mid-century to build their sense of professionalism and to justify professional standing. One method was to organise medical societies which would serve to bring medical men together and encourage discussion of medical questions. In 1826, Dr. Joseph Morrin had set up the Quebec Medical Society for these purposes and to press for legislation against abuses.<sup>16</sup> Medico-Chirurgical Societies were established in most of the major centres of Upper and Lower Canada and out of the societies came a move to organize a single Association to represent the profession. In 1844, Dr. Joseph Painchaud proposed such an association, which would also undertake to supply governments with “statistical and hygienic” information, but efforts to establish the association failed because of the resistance of doctors who could see no clear advantage to themselves and feared the burden of offering advice to the public

“without remuneration”.<sup>17</sup> Not until 1867 would Confederation offer the occasion to organize the Canadian Medical Association.

The medical profession did not present a united front to the world during the mid nineteenth century. Even as it struggled to define itself it was shaken by disputes between French doctors and English doctors, between country practitioners and those in the city, between those trained in Britain and those trained in Canada and even between those trained in different parts of Britain. In 1836 doctors complained that the Province of Upper Canada made invidious distinctions between licentiates of the Colleges of Surgeons of Dublin, Edinburgh, Glasgow and those of the Royal College of Surgeons of London.<sup>18</sup> Divided, distrusted and with little public respect or support the medical profession further undermined public confidence in itself by its failure either to explain or to deal with cholera when it came to Canada.

#### *Canadian Doctors and the Cholera*

When cholera threatened Canada in 1832, laymen and doctors alike had access to information about the disease which was widely published in the press. The British government sent the Governor General copies of the reports of the investigations of various commissions which had visited Russia. He, in turn, made them available to the Quebec Medical Board. The British government also sent copies of the recommendations of the Central Board of Health for the consideration of Canadian doctors. It was on the basis of this British information that the Quebec Medical Board made the recommendations on which the quarantine act of 1832 was based.<sup>19</sup> Interested doctors, such as Dr. Joseph Painchaud, collected and distributed among their colleagues what writings they could find on the disease.<sup>20</sup> Some military men had served in India and had seen the disease there and military surgeons were familiar with the recommendations of their colleagues in India. The first impulse of most doctors interested enough to study the question was to form their opinion on the basis of European authors. They would continue to do so, modifying what they read by what they observed in their own practices.

They were, therefore, plunged immediately into the question of whether or not the disease was contagious; a question made more pressing by the huge number of emigrants entering the St. Lawrence each season. Opinion was divided, but the bulk of the Canadian doctors decided that cholera was not contagious but that it required an epidemic influence to develop. A group of American doctors visiting Canada, reported that in the opinion of many Canadian doctors “the disease has not been imported, but has originated in Canada under circumstances favorable to its development (sic) and increase.”<sup>21</sup> Thus confidence in an atmospheric explanation soon produced difficulties as the disease had appeared with the emigrants. Some doctors claimed to have seen cholera before the first emigrant arrived and others pointed out that the emigrants had been coming for weeks before cholera appeared. What was the connexion between emigrants and cholera?



One possible explanation could be found in the idea of predisposing causes — that something one did or did not do predisposed one to a disease which was epidemic. Diet, intemperance, immoderate habits and dirt might be predisposing causes. The conditions under which the emigrants were transported, crushed together in filthy ships, weakened by poor food and suddenly exposed to a new climate would render them particularly liable to the disease. In Canada, the cholera had ravaged the French Canadian population, it was said, and their habits had remained unchanged since the conquest. They lived on vegetables, soup and bread, paid little attention to comfort or cleanliness and were usually intemperate. The English, on the other hand, had “good substantial nutriment”.<sup>22</sup> If the disease originated in Canada, what was the justification of quarantine? The Quebec Board of Health did consider closing the station at Grosse Isle when cholera appeared in the city, but decided to keep it as a place where people could clean themselves before finishing their journey.<sup>23</sup> In future years, quarantine would be kept although logic did not support it, because it served as a means of preventing obviously sick people from landing in Quebec.

In the face of the emigrant tide, many doctors continued to emphasize that cholera was not contagious. Dr. A.F. Holmes stated flatly that the pattern by which the disease spread, the fact that it first attacked the French Canadians and the fact that it appeared in Quebec before cases were reported at Grosse Isle were “sufficient ground to repudiate the idea of its having spread from one point, or its having been introduced by emigrants . . .” He then agreed that the fact that it spread along commercial routes did raise questions but felt “forced to leave the subject without attempting to solve the problem.” Holmes had believed that once the disease appeared in a community it could not be passed from person to person but “from personal observation” he was forced to the conclusion that in some circumstances cholera could become infectious and pass from person to person. The disease, said Holmes, was “generally devoid of infectious power, but subject, under circumstances favorable to it, to acquire that power.”<sup>24</sup>

The observed facts struggled against the theory of non-contagion. There could be no clearcut agreement. Dr. Joseph Workman presented a thesis for his M.D. at McGill in May 1835. In it, he argued that all cases of the disease were found among people who had had contact with victims and that “its close adherence to emigrants proved still more incontestably the agency by which it is transmitted from country to country.” The thesis, said Workman, was not challenged by the faculty.<sup>25</sup>

In the fifteen years after the epidemic of the 1830s, Canadian medical training had changed and a number of medical journals were being published in the country. These offered their readers a combination of reports gleaned from foreign journals, thus serving as channels to bring the latest European ideas to Canada, and as forums for Canadian doctors. As most of the local doctors were practitioners not especially interested in the theory of disease, local contributions were limited in number.<sup>26</sup> The discussions in the journals do suggest that experience in the 1840s and 1850s had led most doctors to accept the idea that cholera

was contagious to some extent. George Douglas, medical superintendent of Grosse Isle was prepared to argue that "to assert that cholera is contagious in the same degree as typhus fever or small pox is against all observation and experience." He pointed out that not one doctor, clergyman or nurse, who attended cholera victims was in anything like the danger that similar attendants of typhus victims faced.<sup>27</sup> That might be true, but did it mean that cholera was not contagious. "When we reflect that contagious diseases frequently exhibit themselves in a form apparently epidemic and that epidemics assume many of the features of contagious diseases, it becomes a matter of exceeding difficulty to draw the line of demarcation between them" wrote Dr. Archibald Hall.<sup>28</sup> The atmospheric argument remained strong but in the aftermath of the 1849 epidemic there were doctors who were prepared to argue for contagion. Dr. William Marsden argued that cholera could be transmitted from person to person by direct or indirect contact either by a virus (like smallpox) or by a miasmata from the sick person (like the plague). For Marsden it was the beginning of a life long campaign to convince his colleagues that cholera was contagious.<sup>29</sup>

If the profession was beginning to incline toward the idea that cholera was contagious, it was no more convinced of the argument than were doctors elsewhere. In Canada, the reasons for rejecting contagionism were strong. As Dr. Anthony von Iffland, a man with extensive experience, pointed out the doctrine of contagion was a doctrine which struck terror into people and produced panic and, interestingly, gave the medical profession an undeserved reputation as "a preserver endowed with courage to confront, and skill to disarm, the unseen destroyer."<sup>30</sup> On the other hand, a resolution of the Medico-Chirurgical Society of Montreal, that cholera was "essentially non contagious" was condemned by many doctors and laymen.<sup>31</sup>

In 1866, something of an official opinion on the question was given by a panel of doctors called together by the Bureau of Agriculture. These "unbiased and well informed minds . . ." agreed that cholera was "portable" and that it was best to assume "that it is carried by persons, effects and merchandize and even by the winds of the air and currents and streams . . ." and that it could "make a jump over distances of several hundred miles . . ." The practical consequences were that quarantine should be maintained to "delay" and "limit the spread" of a disease it could not prevent. The pamphlet was reissued without amendment by the Bureau in 1873, in the face of the expected return of cholera.<sup>32</sup> In that same year, the *Canada Medical and Surgical Journal* stated flatly "of the contagious character of cholera there can be no doubt" and quoted the example of Halifax, which had successfully contained an outbreak of cholera to the ship on which it occurred by a rigorous quarantine in 1871. The editor, having made that bold claim, retreated to the argument that quarantine "if it does not prevent the introduction of disease, at least induces a feeling of public security, which is in itself beneficial . . ."<sup>33</sup> The debate over contagion revealed that the profession was confused and had no clear opinion that was incontrovertible.

tible. In that, doctor and layman were alike and why, then, should the layman listen to the doctor or look to him for advice.

There was no clearer answer to the question of the nature of the disease or its action on the body. Doctors and laymen alike could see and describe the manifestations of the disease but doctors needed to know how it was acting internally. The disease struck at the "gastric and intestinal functions".<sup>34</sup> Autopsies were performed to discover the exact nature of the disease but there was no agreement. The disease might be one of the intestines, but it could also be one where the intestinal upset and discharges were only the consequences of the body's efforts to purge itself of a poison affecting the lungs, the nervous system or the blood. In the 1830s, the tendency was to see cholera as a disease of the blood "the sudden abstraction of saline particles from the blood . . ." which had to be restored if health was to return.<sup>35</sup> This was the basis for saline treatments of the disease. It was also possible that it was a disease which by fermentation produced a poison that overloaded the digestive system or that it was a disease which depressed the nervous system and stopped all the body functions. When Dr. Hall published accounts of microscopic examinations from European journals he thought they held "the probability of results of great magnitude," suggesting as they did the possibility that a specific agent was involved in the disease.<sup>36</sup> No Canadian doctor seems to have followed this approach to the disease.

The centre of the relationship between doctor and patient was the doctor's ability to cure his patient or to make him feel that what the doctor offered was worth having. If a man could reassure the patient, he would have his gratitude and he did not have to be a regular physician to do that. The treatments which Canadian doctors hurled against a disease they did not understand were as barbarous as any used elsewhere in the world and cannot have reassured the patient. In the 1830s, the favored treatments were bleeding, calomel in doses large enough to make the gums bleed, opium and counter irritant therapy by cautery and blistering. Some of the hardier patients survived. Private Patrick Mullany of the 32nd Regiment was one. He was taken ill on duty at Quebec City in 1832. He hid from the doctors until he was seen to be sick and was taken to hospital on July 17 at 9:00 a.m. He was bled thirty ounces, given fifteen grains of calomel and two of opium, given a turpentine enema and rubbed with turpentine to ease his cramps, fed ginger tea and allowed to rest. At 2:00 p.m. he was given another three grains of calomel and put on a course of 1/8 grain of opium every half hour with calomel every third hour. That evening he was dosed with castor oil. July 18 and 19 passed with calomel, opium, castor oil, an enema but also a glass of port wine every two or three hours. On July 20, he was given an acidulated drink, warm wine, lemonade, beef tea and had a blister applied to his stomach. On July 21 he was dosed with rhubarb, had twelve leeches applied to his stomach, followed by a second blister and was fed beef tea and arrowroot. By July 22 he was able to eat oatmeal porridge for breakfast, but the mercury had begun to affect his mouth. He was given bicarbonate of soda every three hours and beef and arrowroot teas. On July 23 the medicines were ended and he im-

proved slowly until July 30 and was able to return to duty on August 11.<sup>37</sup> Perhaps he was right to hide on July 17; but he was receiving the best treatment of the day.

In both Lower and Upper Canada, efforts were made in 1832 to transfuse solutions into the veins. Dr. George Griffin described one such experiment. Private James Williams of the 26th Regiment when almost dead was given a transfusion of 17 pints of soft rain water "carefully filtered" and mixed with 180 grains of muriate of soda, 206 grains of carbonate of soda, 204 grains of phosphate of soda. After ten minutes, Williams lost the blue colour and opened his eyes, saying that he felt better. "About twenty five minutes after the commencement of the transfusion, when about eight pints of the fluid had been introduced, he suddenly vomited . . . and died in a few minutes." It was the usual outcome of these experiments.<sup>38</sup> Perhaps it is not surprising that people looked to other medical help than that of the regular doctors.

The only major shift in therapy in late epidemics was that bloodletting was less used. It was going out of style in general practice. Dr. F.C. Mewburn remarked in the 1880s that "in medicine, the furious bloodletting are gone, and well would it have been had we retained the lancet, using it moderately, instead of doing as we did about 1845, by taking up stimulants, and, like bleeding, carrying it to excess."<sup>39</sup> There were those who regretted its passing in cholera therapy. Dr. Wm. Marsden made a strong plea for its use, based on his experience in 1832. "My practice was then *bleeding whenever blood could* be obtained, even in collapse and I am not sure that any better practice could be adopted now in very many cases." Marsden combined bleeding with massive doses of calomel "of upwards of 200 grains within a few hours." His own practice and the experience of doctors in India and France convinced him that bleeding restored the circulation.<sup>40</sup> The enthusiasm for transfusion treatment also declined in these epidemics, presumably because of the lack of success. Dr. James Bovell of Toronto did experiment with transfusions of milk in 1849 but his experiments were not repeated.

Marsden obviously felt that bleeding needed a strong defence against his colleagues' growing scepticism but he need have no fears for the calomel. Dr. Archibald Hall, writing as lecturer in *Materia Medica* at McGill, argued that the evidence of autopsies convinced him that the cause of death was "an impression of the nervous system" which impeded the vital body functions. Hall rejected stimulant therapies and concentrated on checking the vomiting and purging and restoring "the various secretions by excitation of the glandular viscera." Calomel in large doses, combined with morphia, should be given at first, followed by smaller doses every half hour or hour.<sup>41</sup> Dr. George Gibbs reported that he had followed the suggestions of the English Dr. Ayre of Hull (whose suggestions had been reported in the Canadian medical press) and given large doses of calomel. "I have never regarded the quantity of calomel taken as of any moment in such a dreadful disease, trusting to combat its ill effects by proper treatment after subduing the cholera."<sup>42</sup> One can imagine the effects of that attitude on

patients with previous experiences with the effects of calomel, and doctors did meet resistance from patients who had the strength to resist. By the 1850s, there were reports in the medical press of treatments being used in England which were designed to maintain the patient's strength while nature made the cure — but those treatments smacked of homeopathy and the regular physicians seemed to prefer an assault on the disease and on the patient. Doctors always claimed that early treatment was the key to a cure, but many patients knew better and treated themselves or their friends.

Few Canadian doctors showed any interest in microscopy but some of them were interested in the statistical approach to epidemiology which yielded important results in mid-nineteenth century Europe. The collection of statistics showed that certain parts of a city were less healthy than others and lent strength to the arguments of sanitary reformers. As early as 1834, William Kelly, a surgeon of the Royal Navy had read a paper on medical statistics to the Literary and Historical Society of Quebec. In it he had shown that the mortality in the towns of Lower Canada was twice that in the country and suggested that increasing ratio of mortality at a time of commercial growth was the result of failures to keep the cities clean and well supplied with water. He argued that it was particularly important to supply the poor with water “as the scarcity of water is perhaps the only one of the sources of disease peculiar to them, that can be met by municipal regulations . . .” Self interest supported action because “when disease begins among the poor, it sooner or later spreads to the rich.” Kelly's studies were hampered by inadequate statistics and “slovenly” record keeping at the hospitals.<sup>43</sup>

It was a complaint frequently repeated in the future. The statistics collected by local government were inaccurate and uninformative. The need for accurate statistics seemed especially pressing when the country was subject to the large influx of emigrants it experienced each year. “There are very few cities in the United States of any note, and as few also in Great Britain and the European Continent, whose civic authorities have not bestowed some attention to this matter, the weekly or monthly results being published in the form of bills of mortality,” said one commentator in 1845. The figures which did exist suggested to him that mortality was decreasing in Montreal, which he attributed to sanitary improvement.<sup>44</sup> Dr. Joseph Painchaud's experience, referred to earlier, in which doctors failed to act on his suggestion that they create an association which would supply statistical information to government because of the burden it would impose on them, suggests the general attitudes of the profession toward the question in the mid-1840s. The situation did not improve until the late 1860s, when the new Canadian Medical Association set up, as one of its first committees, a committee on statistics. The lack of record-keeping by all levels of government hampered all attempts to underpin medical suggestions with solid evidence.

Whenever an epidemic struck Canada, local Boards of Health were set up to enforce quarantine and to suggest and enforce local sanitary laws. They met con-

siderable opposition and inertia, were short lived and had little impact on the conditions of the towns of Canada. The relations between Boards of Health and the medical profession were often strained. Boards were usually largely composed of laymen and therefore quickly aroused the professional pique of the doctors. In Lower Canada in 1832 relations deteriorated very quickly between the Boards and the doctors who felt that they were being too harshly criticised. Similar professional complaints were raised in 1849 when the Central Board of Health was accused of being a lay body "armed . . . with almost despotic powers, controlling the Profession and the Local Boards throughout the province . . ." A certain bitterness crept into the complaint that "Every one, now-a-days, dabbles in Physic . . . and it is but one step further to attribute to every one an intricate and intuitive acquaintance with the causes of disease and the means for their prevention and removal . . . fitting them at once to be able members of a Board of Health, and capable of immediate legislation for the profession and the public, on some of the most subtle and intricate questions which can possibly engage the attention of men." "The profession will not voluntarily submit itself to the control of a Board in which a lay constitution is so monstrously predominant."<sup>45</sup> That was just the point — many laymen could not see how the medical profession was any better qualified to comment on cholera than were laymen, but they did recognize that medical men claimed a professional expertise that had little basis in knowledge. Part of the failure to act to clean up Canadian cities lay in the fact that there was no clearly obvious scientific reason why the cities which were filthy in the years before and after the epidemics needed to be clean to prevent epidemics.

### *Conclusion*

Cholera was a hideous disease which created fear, panic and a demand for action. By its nature, it raised a number of troublesome questions to which there were no clear answers before the germ theory was generally accepted and the mode of transmission suggested by Budd and Snow was acknowledged. Canadian doctors were aware of the debate over the question of contagion and contributed to it from their own experience in some of the most fatal epidemics in the West. Their contributions helped to undermine their standing in the public's eye because it led laymen to think that the profession was merely confused. When they added to that confusion a barbaric therapy against a disease which they clearly did not understand, they sacrificed further public respect.

This disillusionment of the public with the profession was reflected in the wide support for the irregular practitioners who had always flourished in the frontier conditions of Canadian life. The irregulars now gained greater followings as they offered systems of medicine which were no more harmful, and often less brutal, than that of the regulars. The regular medical men thus found themselves striving through the cholera years to organize themselves in the face of public indifference and hostility. Attempts to improve medical education led to the setting up of a number of medical schools, but they offered relatively little training in areas which would prove useful in the fight for public health

measures. This weakness was reinforced by the fact that governments did not collect the statistics on which epidemiology could rest. Doctors were thus denied by the nature of their own training and by failures of society the access to the techniques which were proving fruitful in Europe. Medical men claimed a position in society which their scientific knowledge did not sustain, but they undermined that claim by internal feuds which often divided them and reduced their prestige. They sometimes appeared to the public as a self interested group of squabbling poseurs. Their relations with Boards of Health, where they were set up, often reflected this fact. Not until cholera had ceased to be a threat to Canada did developments take place in medical science and in medical education in Canada which could permit the profession to make valid the claims it had advanced to scientific expertise and the right to a professional standing in the community. When those changes occurred progress was made in public health.

## NOTES

<sup>1</sup> Discussions of the social impact of cholera can be found e.g. in Asa Briggs, "Cholera and Society in the nineteenth century" *Past and Present*, 1961, vol. 19, pp. 76-96; Louis Chevalier, *Laboring and Dangerous Classes in Paris during the First Half of the Nineteenth Century* (New York, 1973); Roderick E. McGrew, *Russia and the Cholera 1823-1832* (Madison, Wis., 1965); and Charles E. Rosenberg, *The Cholera Years* (Chicago, 1962).

<sup>2</sup> J.J. Dizon, "Cholera Carriers" and E.J. Gangarosa and Wiley H. Mosley, "Epidemiology and Surveillance of Cholera" in Dhiman Barua and William Burrows, eds., *Cholera* (Philadelphia, London, and Toronto, 1974).

<sup>3</sup> The fullest discussion of the debate over the disease can be found in Norman Howard-Jones', "The Scientific background of the International Sanitary Conferences 1851-1938" *W.H.O. Chronicle* 28, pp. 159-171, 229-247, 369-384, 414-461.

<sup>4</sup> J.K. Crellin, "The Dawn of the Germ Theory: Particles, Infection and Biology" in F.N.L. Poynter, ed., *Medicine and Society in the 1860s* (London, 1968).

<sup>5</sup> Norman Howard-Jones, "Cholera Therapy in the Nineteenth Century" *Journal of the History of Medicine and Allied Sciences*, 27 (1972), pp. 373-395.

<sup>6</sup> Rosenberg, *Cholera Years*, pp. 70-72.

<sup>7</sup> Maude E. Abbott, *History of Medicine in the Province of Quebec* (Montreal, 1931), p. 49.

<sup>8</sup> William Caniff, *The Medical Profession in Upper Canada 1783-1850* (Toronto, 1894), pp. 53, 176.

<sup>9</sup> William G. Rothstein, *American Physicians in the 19th Century* (Baltimore, 1972), p. 85.

<sup>10</sup> Caniff, p. 185; George W. Spragge, "The Trinity Medical College" *Ontario History* vol. 58 (1966), p. 69; C-M. Boissonault, "Charles-Jacques Fremont" *D.C.B.*, vol. IX (Toronto, 1976).

<sup>11</sup> Harvey Cushing, *The Life of Sir William Osler*, vol. 1 (Oxford, 1925), pp. 70-71, 144.

<sup>12</sup> Abbot, p. 72; Sylvio LeBlond, "La médecine dans la Province de Québec avant 1847" *Les Cahiers des dix*, vol. 35 (1970), p. 81; H.E. MacDermott, *History of the Canadian Medical Association 1867-1921* (Toronto, 1935), p. 3.

<sup>13</sup> Caniff, pp. 20-21, 31, 36, 62, 64, 67, 153; MacDermott, p. 8.

<sup>14</sup> *Canada Medical Journal*, July 1852 quoted in Spragge, p. 64.

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- <sup>15</sup> Caniff, p. 153; McDermott, p. 11.
- <sup>16</sup> John J. Haegerty, *Four Centuries of Medical History in Canada*, vol. 1 (Toronto, 1928), pp. 282-283.
- <sup>17</sup> McDermott, pp. 17, 19.
- <sup>18</sup> Caniff, pp. 87-88; G.M. Craig, "Two Contrasting Upper Canadian Figures: John Rolph and John Strachan", *Transactions of the RSC*, vol. 4 Series, vol. XII (1974), p. 247. Abbott, p. 72.
- <sup>19</sup> G. Bilson, "The First Epidemic of Asiatic Cholera in Lower Canada," to appear in *Medical History*, October, 1977.
- <sup>20</sup> Public Archives of Canada (P.A.C.), Records of the Governor General, RG7 G18, vol. 16-17, Dr. George Roberts to Lord Aylmer, 31 May 1833.
- <sup>21</sup> J.E. DeKay, J.R. Rhinelander, *Report of the Commissioners employed to investigate the origina and nature of the Epidemic cholera of Canada* (New York; July 1832).
- <sup>22</sup> Samuel Jackson, Charles Meigs, Richard Harlan, *Report of the Commission appointed by the Sanitary Board of the City Councils to visit Canada for the investigation of the Epidemic Cholera . . .* (Philadelphia, 1832), pp. 6-7.
- <sup>23</sup> Bilson, "Lower Canada".
- <sup>24</sup> Martyn Paine, "History of the Cholera at Montreal", *Boston Medical and Surgical Journal*, VIII, vols. 4 and 5 (1833), pp. 54-55. This was a questionnaire answered by Dr. Holmes.
- <sup>25</sup> Dr. Joseph Workman, "Cholera in 1832 and 1834", *Canada Medical Journal*, vol. 2 (1865-66), pp. 485-489.
- <sup>26</sup> E.H. Bensley, "Archibald Hall", *D.C.B.* vol. IX, p. 358.
- <sup>27</sup> George Douglas, "Asiatic Cholera", *British American Journal of Medical and Physical Sciences*, vol. 3 (1847-48), p. 262.
- <sup>28</sup> *British American Journal of Medical and Physical Sciences*, vol. 4 (1848-49), p. 220.
- <sup>29</sup> *British American Journal of Medical and Physical Sciences*, vol. 5 (1849), p. 198; *Canada Medical Journal*, vols. 4 and 5 (1868-69).
- <sup>30</sup> A. von Iffland, "The Quebec Board of Health, the cholera at Beauport and its Treatment", *British American Journal of Medical and Physical Sciences*, vol. 5 (1849), pp. 199-200.
- <sup>31</sup> *British American Journal of Medical and Physical Sciences*, vol. 5 (1849), p. 108.
- <sup>32</sup> *Memorandum on Cholera* (Ottawa, Bureau of Agriculture and Statistics, 1866, 1873).
- <sup>33</sup> *Canada Medical and Surgical Journal* (1873), p. 426.
- <sup>34</sup> Jackson, *Report*, pp. 21-22.
- <sup>35</sup> George Griffin, "Observations", *British American Journal of Medical and Physical Sciences*, vol. 4 (1848-49), p. 293.
- <sup>36</sup> *British American Journal of Medical and Physical Sciences*, vol. 5 (1848-49), pp. 178, 209.
- <sup>37</sup> Griffin, p. 269.
- <sup>38</sup> *Ibid.*, p. 295; and see Bilson, "Lower Canada".
- <sup>39</sup> Caniff, p. 517.
- <sup>40</sup> William Marsden, "On bloodletting in Cholera", *British American Journal of Medical and Physical Sciences* (1849), pp. 141-145.
- <sup>41</sup> A. Hall, "On the calomel treatment in Algide or Asiatic Cholera", *British American Journal of Medical and Physical Sciences*, vol. 5 (1949), p. 86.
- <sup>42</sup> George D. Gibbs M.D., "On the successful Treatment of Cholera in Canada", *Lancet* (1854), p. 5.
- <sup>43</sup> William Kelly M.D., "On the Medical Statistics of Lower Canada" read 19 April



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1834, *Transactions of the Literary and Historical Society of Quebec*, vol 3, 1st series (reprinted 1927), pp. 193-221.

<sup>44</sup> See e.g. *British American Journal*, January 15, 1845; *ibid.*, July 15, 1845.

<sup>45</sup> *British American Journal*, July 2, 1849, p. 75.