

CHOLERA IN EARLY SINGAPORE (PART I) (1819-1849)

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A general introduction to the study of the medical history of early Singapore has already been briefly outlined (Lee, 1973).

The Straits Settlements were administered as part of India until 31st March, 1867. During the period 1819-1849, the government authorities in Penang and Singapore and later Malacca (from 1824) were directly or indirectly subordinate to the Government of Bengal. Major policy decisions were made by the Governor of Bengal and his Council at Fort William (Calcutta). Government officials in the Straits came from Bengal and the non-European troops in the Settlements were detachments of the Bengal Native Infantry. There was a constant influx of sepoys as one regiment after another arrived on their tours of duty. Other sojourners from Bengal, other than traders, were campfollowers and convicts. The Straits Settlements during this period were convict settlements (mainly for convicts from India) besides being political and trading outposts. Shiploads of Bengali convicts arrived regularly. Each Settlement had a Convict Jail and a Convict Hospital.

This short introduction will serve to emphasise the close ties that existed between Bengal and the Straits Settlements in the first half of the 19th century.

Bengal is considered the home of cholera, and it is probable that from ancient times, cholera has been endemic there. Bengal is undoubtedly the most important epidemic centre of cholera in the world. The origin of most epidemics in India, some of which have become pandemic, can be traced to Bengal.

The source of infection in cholera is always a human being. This being so, the spread of infection must necessarily be along lines of human communication, and the speed with which the disease has spread in the past has always been controlled by this fact. Cholera never travels faster than man can travel.

The first pandemic started in India in 1817 and spread all over Asia by land and sea until 1825. It did not reach Europe.

The second wave started in India in 1826, and followed a similar course, but on this occasion, it spread by 1832 further to Europe and America.

The pandemic of 1840-1849 also had its origin in India.

The history of cholera in early Singapore will be considered in relation to these three pandemics.

Two factors made it inevitable that the Straits Settlements could not escape the ravages of cholera during the three pandemics—its close association with Bengal and its being along one of the greatest sea routes in the world, the Straits of Malacca. Singapore was particularly vulnerable, being at the cross-roads of the East and West and possessing an excellent harbour.

In 1818 as a result of experience gained in the first epidemic, General Orders on the treatment of Cholera were issued to Army doctors in India (including Penang). These G. Os. recounted the personal experiences of certain Medical Officers, their methods of treatment and the results for the information and guidance of other doctors. One General Order of 4th February 1818 will be quoted to show what measures were taken in attempts to alter the course of the disease. This G. O. reproduced a report by Assistant Surgeon Frederick Corbyn who was in charge of a Native Field Hospital in an epidemic area in India.

The report described the signs and symptoms of cholera. It recorded the failure of treatment along standard lines in one case with "calomel gr. 3 and opium gr. $\frac{1}{4}$ two hourly, with frequent draughts of brandy and water and other stimulants". The patient died and a necropsy was performed the same evening. The findings indicated to A. S. Corbyn that his treatment had to be modified.

For the next 110 patients (with only two deaths), the following treatment was tried:

"Calomel gr. 15 which I dropped on the tongue and washed down with 60 drops of Laudanum and 20 drops of Peppermint in 2 ounces of water. (Laudanum in a large dose of 60 drops is a sedative and not a stimulant. Similarly with Calomel in large doses.) The treatment was not to stimulate, but one which removed the irritability and spasm, composed the stomach and bowels, produced sleep and tranquillity of the mind, excited the secretion of the liver and prevented the progress of inflammation. The

next day, a dose of Jalap 30 gr. was given which effected one or two bilious motions.

The treatment of Europeans was slightly different and included copious bleeding, never less than 20 gr. of Calomel with 60 drops of Laudanum and 20 drops of Peppermint in 2 ounces of water; and on spasm attacking the abdomen, the application of a large blister. If this failed, immersion in a warm bath or warm frictions and pots of warm water thrown over the patient produced reaction of the circulating system. If vomiting and purging were incessant, the treatment was 80 drops of Laudanum, 20 drops of Peppermint and 20 gr. of Calomel, and injecting 40 drops of Laudanum in conjee by enema, and repeated in 3 - 4 hours. Thereafter the bowels were kept open regularly with Calomel and Jalap, and occasionally 60 drops of Laudanum to promote sleep."

It was also emphasised that treatment should be started within six hours of the onset of symptoms for it to be effective, and that calomel should be given in powder form as pills would be passed out in the watery motions (S.S.R., GG. 7., 1818).

Cholera arrived in Penang with explosive suddenness in October 1819. "... the Epidemic Cholera has made its appearance in the Island and has already proved in some cases fatal. . . ." Steps taken to cope with this emergency will be described in some detail as they were adapted later to contain outbreaks in Singapore. An ad hoc action committee consisting of the Superintending Surgeon, the Town Major and the Superintendent of Police, representing the Medical, Military and Police departments, was formed with authority to deal with the situation:

"Measures have been adopted by the Superintending Surgeon and the Medical Storekeeper to prepare the usual remedies for this disease, but the object of your meeting will be to suggest to Government any particular rules which it may be desirable to recommend to the Public and to be adopted generally by the Public and individuals, and means for spreading abroad the knowledge of the remedies and facilitating their application in the most judicious manner. Such arrangements therefore as may suggest themselves to you for these purposes calculated to repel the further progress of the disease and to distribute the remedies in hand, you are requested to submit to Government as early as may be practicable" (S.S.R., H. 3., 1819).

On October 26th, 1819, the Committee proposed that hospitals should be established in the various districts in the island, and that extra staff

should be trained to administer the remedies (S.S.R., H. 3., 1819).

This was approved by the Governor on 29th October 1819:

"It being the anxious desire of the Honourable the Governor in Council to evince every consistent liberality and benevolence towards the inhabitants of this Settlement, you are requested to take under your immediate superintendence the execution of such of the measures recommended by you as are most pressing, and the others as they may become necessary. . . . The Superintending Surgeon is desired to make such subsidiary arrangements in the department under his control as the exigency may arise . . . (S.S.R., H. 3., 1819).

During the height of the epidemic in November 1819, the Superintending Surgeon recommended that medicines be sent to Kedah, Malacca and Singapore in anticipation of the spread of cholera (S.S.R., J. 8., 1819). On 5th November 1819, the following communication was sent to Major (later Lt. Colonel) Farquhar, the Resident and Commandant at Singapore. Nine months after its founding, Singapore was threatened with its first epidemic.

"The epidemic Sickness of Cholera Morbus having appeared at this Presidency, and on the opposite shore of the Malay Peninsula, and the Honourable the Governor in Council being apprehensive of its extending to Singapore, I am directed to transmit to you the enclosed printed instructions for administering Remedies which have in many instances been attended with great success in arresting the progress of the disease.

I am further directed to enclose an account of Medicines consigned on the Honourable Company's Ship William Pitt" (S.S.R., I. 18., 1819).

A similar letter was sent to Timmerman Thysen, the Dutch Governor of Malacca (S.S.R., I. 18., 1819). Although political relations between Britain and Holland were strained, there was co-operation in the medical field.

Apart from a few sporadic cases, the epidemic did not establish itself at Singapore. Sub-assistant Surgeon Thomas Prendergast, when detailing his duties in Singapore in 1819, wrote that he was "... in charge not only of the Troops, but of upwards of 1000 daily labourers employed in clearing jungle, of whom I seldom had less than 100 in my list with cholera, fevers, dysentery, broken bones and ulcers. . . ." (S.S.R., M. 2., 1823).

The epidemic however spread through most of the Malay States in the Peninsula, and from there to Siam, where it was reported, 100,000 people died (S.T., 19.2.1850).

By the end of December 1819, the epidemic was under control in Penang, and the Cholera Committee was dissolved (S.S.R., H. 3., 1819). A report of the epidemic and the arrangements made to combat it was made to the Court of Directors of the East India Company in London: "... By these means and the blessing of Providence, the Disorder has been now checked. . . . The hospitals and additional Medical Establishments have been consequently paid off and discharged" (S.S.R., B. 5., 1820).

The Court of Directors replied signifying their approval of the steps taken and gave credit to the Medical department:

"It has been very gratifying to us to learn the timely precautions which were taken to check the virulence of this disease have been attended with great success, although we have to lament the ravages which it occasioned and the number of victims to its fatal attacks.

Your proceedings on this melancholy occasion have our unqualified approbation, and the exertions of your Medical Officers and of those employed under their superintendence are entitled to our praise. It is consolatory to be informed that on the date of your letter now under reply the Disease might be considered as removed" (S.S.R., C. 5., 1822).

The problem of cholera was tackled vigorously by the Supreme Government in India. Reports and other relevant literature were regularly sent from India to the Settlements. In May 1820, two copies of a Report on "Epidemic Cholera Morbus" were sent to Singapore from Bengal:

"The Governor General in Council considering a detailed account of the rise, progress and symptoms of the Epidemic Cholera Morbus, which has so severely ravaged the Territories subject to the Presidency of Bengal several years past, would prove a useful and valuable record in the several Presidencies, Colonies and Settlements under the British Government in Asia, I have the honour to transmit two copies of a Report on the dreadful disease drawn up by the orders of the Bengal Government under the superintendence of its Medical Board" (S.S.R., L. 4., 1820).

The Resident at Singapore, while acknowledging receipt of the reports, informed the Bengal Government that there was no cholera in Singapore:

"... which Document will no doubt prove a most useful and valuable record in these quar-

ters of the British Dominions where that dreadful disease has been ravaging the various Malay countries in the immediate vicinity of Singapore, although the Settlement itself has hitherto most providentially escaped its direful effects" (S.S.R., L. 4., 1820).

The reason for Singapore being relatively untouched by cholera could be because being an island (covered by dense jungle in 1820), its only contact with the outside world being by sea, the strict quarantine measures adopted were effective. One example will be quoted in full as it was the first recorded instance of quarantine and port sanitation in Singapore (S.S.R., L. 4., 1821). In June 1821, an Austrian boat arrived at Singapore, and the Austrian Consul General, on behalf of the ship's captain, requested permission for the sailors to land. The Resident replied very politely but firmly:

"... I regret extremely to hear that the prevailing epidemic or some other most distressing sickness rages on board the vessel under Sir S. Poeltt's command, and as I profess to be altogether ignorant whether or not the disease alluded be infectious or otherwise, I have to request that you will have the goodness to explain to Sir S. Poeltt my desire that no communication may be held with the shore until such time as I may have received a report as to the nature of the disease from the Medical Officers belonging to this Settlement, who have been ordered to proceed on board the Caroline Augustus, and to whom I request every facility may be afforded for the purpose of enabling them to make me acquainted with the nature of the disease alluded.

Under any circumstance I shall be happy to render every assistance in my power to arrest the progress of the sickness on board the Caroline Augustus. . . ."

Assistant Surgeon Montgomerie and Acting Assistant Surgeon Prendergast were sent the next day "at sunrise in order to ascertain as far as may be practicable whether or not it would be proper or expedient for me to comply with the request made by Sir S. Poeltt, the Commander of the Vessel, to permit such part of his ship's crew as may be harbouring under disease to land on this Island."

The doctors reported back the same day: "Agreeable to your request, we this morning proceeded on board the ship Caroline Augustus, and found from enquiry that the Ship's company since her departure from Batavia has suffered severely from the Cholera Morbus; that latterly the attacks have neither been so

severe nor morbid as at first; that one man was attacked two days ago but is convalescent; that since that there has been no case of it.

We are of opinion that you might with safety permit the convalescent men to be landed at Sandy Point, but that it would be advisable not to permit any future case to be landed till convalescent."

These views were transmitted to the Austrian Consul General together with this order "... that during the present sickly state of the ship as little intercourse with the shore as circumstance will permit must be observed."

In 1822 the first pandemic was still raging. Many forms of treatment were claimed to be effective. A naval surgeon wrote to the Court of Directors advocating his method of treatment. He submitted a number of case reports to support his case for the use of nitrous acid and opium. This document was forwarded by the Court of Directors to the authorities in Singapore, but there is no record of that treatment having been tried (S.S.R., C. 5., 1822).

Experiences acquired continued to be shared, and in 1824, the Singapore authorities began to receive reports on cholera from Madras, another endemic centre in India (S.S.R., A. 19., 1824).

During the second pandemic between 1826 and 1832, there were no recorded instances of epidemic outbreaks in the Straits Settlements. The newspapers however were full of accounts of the "dreadful ravages" in India, Eastern Europe, Ireland, London and Paris (CHR., 1831, 1832, 1833), and the Medical Officer at Singapore, Assistant Surgeon Thomas Oxley, was worried that should an epidemic break out, there was no hospital specially reserved for Europeans. He wrote to the Resident Councillor on 19th February 1831 expressing his fears:

"... It would be needless for me to point out the very great benefits that would arise from having an Hospital for Europeans in a place of this kind where there is such a concourse of shipping, and where necessarily many must fall victims for the want of receiving that aid which is readily afforded throughout the civilised world to all such as stand in need of it. Did any epidemic arise there would not at present be a single place to receive the unfortunate sufferers, and the most lamentable consequences would result..." (S.S.R., W. 1., 1831).

The Singapore Chronicle of 22nd December 1832 printed an article on a method of treatment in vogue in India for the information of its readers. A special mixture was made by dissolving 8 oz. of Bazar Sal Ammoniac and 8 oz. of unslaked lime in

one Quart of boiling water. This mixture was decanted after three days. Three drachms of the mixture diluted with three times the quantity of water, with a few drops of essence of peppermint added, was the prescription for cholera. It was supposed to have been very effective, having cured 165 out of 171 patients in one outbreak (CHR. 22.12.1832).

The third pandemic started in 1840. By March 1841, it appeared in epidemic proportions in Singapore after having visited Malacca. "At this moment, the scourge of humanity, the Cholera, has begun to manifest itself at Singapore, after the ravages it has but lately committed in the Settlement of Malacca..." The mortality was considerable (S.F.P., 1.4.1841). Once again, various methods of treatment were advocated by all and sundry. A number will be quoted for the record. The multiplicity of methods and drugs suggests that none was of any real value, although Mr. Oxley's argument sounds quite "modern" (see below).

"2 teaspoonsful of strong decoction of cloves, cinnamon and spice,
1 teaspoonful of red pepper,
1 teaspoonful of black pepper,
60 drops of laudanum,
to be put in a large claret glass, which fill two-thirds full of brandy or arrack, then add boiling hot water sufficient to make the dose as hot as a patient can conveniently take it. One half of the above dose to be given, and if retained no more will be required. If rejected, to be repeated. To a strong person, the whole dose may be given. Children according to age. Some grated nutmeg may be added. The greatest care will be necessary in purging the patient with castor oil."

This method of treatment (Major Wallace's) was printed in a letter to the Singapore Free Press with a recommendation that it should be used when necessary (S.F.P. 1.4.1841).

Mr. Oxley who was then on duty in Malacca, wrote to the Singapore Free Press on 15th April 1841, to denounce this form of treatment as dangerous. He stated that he had tried many remedies during the epidemic at Malacca, including that of Major Wallace. He had used it in five consecutive patients and all died. He warned readers to be careful of this remedy as it was a potent stimulant and an irritant to the stomach—"inflammation of the stomach to be dreaded from the introduction of such fiery ingredients into so sensitive an organ". He reminded them that "the practice of medicine would be an easy acquirement could diseases be paired off with their respective remedies. A physician would then be little more

than a walking collection of prescriptions to be dealt out as occasion might require." He emphasised that the art of medicine was not easy and lamented "that valuable remedies generally abound in proportion to the obscurity and difficulty of the disease and the records of cholera are ample evidence of this assertion. But every enlightened practitioner knows and every candid man will confess that an infallible or universal remedy for even one disease is an utopian principle, a chimera, likely to lead to delusion and error and which cannot be too soon eradicated from every mind." He went on to recommend

"the adoption of a more useful and less dangerous practice which has been found abundantly successful in England, and more useful than any other in my experience, viz. the use of hot salt water emetics and enemata. . . . It recommends itself to trial upon sound and just principles. We know that in cholera the serum or watery constituent of the blood flows off with remarkable rapidity leaving the blood in such an inspissated state that it cannot circulate with its usual freedom through the minute blood vessels, causing a stagnation in portions of the circulating system, and the blood has the appearance of fluid tar. Now, analysis of the blood in cholera by an able chemist, Dr. Claney, shows that in this disease it is deficient of several of its constituents, particularly the muric of soda or common salt. This salt has the effect of keeping the blood in a fluid state as the every day domestic experience in making blood puddings reminds my readers. If then the state of blood be as I have asserted, the administration of salt must be attended with obvious advantages. Experience has confirmed this theoretical view and I have little hesitation in recommending its adoption. . . . I believe that salt water emetics and enemata aided by dry heat to the surface of the body, mustard sinapisms to the abdomen and legs, followed by judicious general treatment will save life in a majority of cases. . . . The dose I would recommend is about 4 oz. of saturated solution of common salt for the first dose, to be repeated according to circumstances. This ought to vomit violently at first, afterwards it will be retained, but want of space will not allow me to enter more into detail at present" (S.F.P., 15.4.1841).

The epidemic of 1841 found the hospital accommodation in Singapore inadequate as predicted by Mr. Oxley in 1831. The Senior Surgeon, Mr. Montgomerie, was asked to explain "the circumstance of our being unable to afford any accommodation whatever to His Majesty's Sloop Pelurus during

the past few days when the Cholera was on board that vessel. . . ." (S.S.R., V. 8., 1841). Montgomerie's reply was to recommend the building of a hospital for seamen and the increase of the Medical Establishment (S.S.R., R. 7., 1841).

Cholera remained endemic in Singapore, and the subject was of sufficient interest to the public for news items to be re-printed from other journals. In June 1845, the Singapore Free Press copied this item for the Medical Times:

"Cure for Cholera. When the labourers employed in the salt pits of Salzburg were attacked with cholera, they were restored by being plunged into hot salt water baths. The dark skin became red again; the pulse, heat of skin and consciousness returned; and the life of the patient was saved" (S.F.P. 12.6.1845).

In the three months from January to March 1847, only one case of cholera was treated in the Jail Hospital. There was none in the European Seamen's Hospital, the Pauper Hospital and Lunatic Asylum (S.S.R., W. 13., 1848). There is no record, of course, of that section of the native population who did not come to the hospitals.

In 1849, there was a recrudescence of the epidemics in Penang and Siam. The Assistant Surgeon at Penang believed that the state of the weather and the disturbance of the electrical phenomena of the atmosphere had something to do with the epidemic (S.S.R., R. 18., 1849). In Siam, the reported number of deaths was 30,000. Strict quarantine was in force in Singapore, and the Government was praised by the Press, an unusual occurrence:

". . . We are happy to observe that the authorities here at Singapore, on being made acquainted with the fearful calamity which has overtaken the neighbouring State of Siam, have taken precautionary measures to prevent the introduction of the disease, by directing that all vessels from Siam be examined to ascertain whether they are in a clean state of health. We are not alarmists but conscious of the influence of fear on the human mind, we cannot too highly applaud the prudent step adopted by the Executive. . . ." (S.T., 21.8.1849).

At the same time, it was also reported in the newspapers that a Report of the U.K. Board of Health had stated, inter alia, that cholera was not contagious and that quarantine was useless. The Press seized this opportunity to criticise the Government and to call on it to improve public health standards:

"What the Local Authorities must do to prevent the breaking out and spread of cholera is to adopt the most active sanitary measures. They

must at once remove all stagnant pools and collections of filth and rubbish. They must see that the ditches in and around town are not allowed to contain stagnant water, and in fine, they must take every possible means of ensuring a pure atmosphere by promoting cleanliness in every shape. . . . The change of the monsoon may bring about an atmosphere favourable to the development of the epidemic, but if all local causes are removed which could tend to encourage and feed the disease, depend on it, the visitation will be much milder. . . ." (S.F.P., 24.8.1849).

The outbreak in the Straits prevailed. More letters appeared in the newspapers describing personal experiences and advocating the remedies that cured the writers. One Charles Perreau wrote to the Singapore Free Press on 10th October 1849, saying that when he had the cholera he tried every known European remedy with no avail and would have died had it not been for a Malay method of treatment, which he wanted to pass on to the readers:

"To a pint of fresh water, put half a pound of ginger, previously bruised, and let the vessel be well covered when put on the fire.

Boil for about ten minutes, then strain the liquor into a cup and add two table-spoonsful of white salt.

Of this mixture, half the quantity will be sufficient for a dose.

The body requires to be briskly rubbed, or 'hampul' immediately on taking the drug" (S.F.P., 12.10.1849).

1849 was not only a bad year for the British possessions in Asia, the newspapers were full of reports of cholera in London (S.F.P., 19.10.1849; 16.11.1849). The Straits Times of 4th December 1849 re-printed a letter from Mr. William Marsden, M.D., Senior Surgeon of the Royal Free Hospital, to a London newspaper in which he described his experiences in the treatment of cholera. Marsden reported his results of treatment in the epidemic of 1832 and 1833, and that of 300 cases in ten days of the present outbreak, half of whom were cured within 12 hours. He also advocated his method of treatment:

". . . The remedies are simple and safe and within the reach of everyone:

Calomel 10 grains, Rhubarb 15 grains, made with water into a soft bolus or three pills, all to be taken on the first evidence of any disorder of either stomach or bowels.

The patient to go immediately to bed, and four hours later, to commence with the following mixture: Tincture of opium 30 drops by

measure, Compound tincture of Cardamons 2 oz., Camphor mixture 6 oz., mix. Two table-spoonsful to be taken every two hours; after four doses, the period to be extended to every four or six hours, and to be continued so long as any relaxation of the bowels remains.

Should the bowels become much confined within two or three days from the first attack, the following aperient draught may be taken: Castor oil and Tincture of Rhubarb, of each three-quarters of an ounce mixed together.

Diet for the first 24 hours to consist of good beef tea, mutton broth (well-peppered) with rice and batter pudding in small quantities at a time. Common tea and coffee must not be taken.

Afterwards, roast beef or mutton, rice pudding and port wine and water, may be taken till the patient is quite restored.

The above remedies, I strongly recommend to be kept in readiness by every adult person, and for children precisely the same treatment in proportionately diminished doses" (S.T., 4.12.1849).

The newspapers also kept Singaporeans informed about theories of the aetiology of cholera. Throughout the greater part of the 19th century, from the time of the first pandemic in 1817 to 1883 when Koch discovered the vibrio, much controversy raged round the aetiology of cholera. The idea of the micro-organismal origin of cholera had been long smouldering. Inhabitants of Singapore were kept up to date by reading in the Straits Times of 25th December 1849 an article in which Dr. William Budd, Physician to the Bristol Infirmary, described the discoveries of members of the Bristol Medico-Chirurgical Society. Mr. Brittain had discovered microscopic objects in the rice water stools of patients with cholera. Dr. Budd himself had examined the drinking water in infected localities and found the same objects, and came to the conclusion that these objects were the cause of cholera. He postulated the theory that these objects were disseminated (a) in the air in the form of impalpable particles; (b) in contact with articles of food; and (c) principally, in the drinking water of infected places. He also suggested two ways of preventing cholera: (i) by destroying these objects when they were excreted by patients, e.g. by collecting the discharges in chemical solutions; and (ii) by preventing these objects from taking effect, e.g. by using pure drinking water by boiling, distilling or getting water from clean districts. Dr. Budd also mentioned that he had placed his findings and conclusions before the President of the Royal College of Physicians of London (S.T., 25.12.1849).

Singapore was fortunate. Only eight cases of Cholera Biliosa occurred in 1849. "... It is gratifying to record our exemption from all epidemic or endemic disease during this period, although we commenced the year with a slight alarm from Cholera, of which eight cases were admitted into the Convict Hospital in April, but as no casualty occurred, we may look upon it as a very trifling matter, and only deserving notice on account of the extraordinary exemption the Settlement has ever enjoyed from this scourge of the human race" It was evidently with great pride that the Senior Surgeon wrote these words in his Annual Report of 1849 (S.S.R., W. 15, 1850).

In the following decades, cholera became more prevalent in Singapore.

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