

THE MENTAL DISEASES HOSPITAL, SINGAPORE (THE FIRST 100 YEARS) - A SHORT HISTORY (PART III)

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ABSTRACT

This article (in four parts) traces the history of the first four Mental Hospitals built in Singapore, which were occupied in 1840, 1861, 1887 and 1928. The management of the patients is described; also their lives and deaths. Mention is also made of the doctors and others who looked after them.

Keywords: Cholera, Beri-beri, Pasir Panjang Wards

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(This article has many quotations from primary sources. The author believes that this mode of presentation is more interesting than a re-hash of the results of his research.)

INTRODUCTION

The death rate for 1893 was the lowest yet recorded for the past 19 years, viz 18.89%, and might have been lower but for overcrowding. Pulmonary tuberculosis, dysentery and diarrhoea, as in previous years, had been the causes of a large proportion of the deaths (25 out of 48 deaths). The high mortality from these three diseases indicated, it was believed, some defect in the sanitary condition of the Asylum, such as overcrowding, insufficient air space, impure air from inadequate renewal (defective ventilation), dampness, etc. However, the general improvement in the death-rate was attributed to a certain extent to the better systems of water supply and sewage removal.

With 293 patients, the accommodation of the Asylum was taxed to the utmost, and it was pointed out that the provision of additional accommodation could no longer be delayed unless the Protected Malay States, Johore and Borneo took back their patients (about 40 in all), and the Chinese Government be requested to do the same with 150 pauper patients who were Chinese subjects.

Pauper patients also came from the surrounding Dutch territories in addition to the very large numbers of Chinese vagrants from the neighbouring Malay States. The PCMO complained that the Lunatic Asylum had become saddled with the maintenance of many who had no claim other than humanity. The resources of the Colony could not keep pace with this ever and constantly increasing demand, and the result was overcrowding. Philanthropy had to have a limit.

Later in the year, the Protected Malay States and Johore were notified that no more of their insane could be received into the Asylum until further notice.

At this period there was great interest in the opium question, and there were many who asserted that opium smoking was a cause of insanity. Dr Ellis, quoting from his experience debunked this theory. "I have never yet seen a person of whom I could believe, or had any grounds for believing, that opium smoking was the cause of his insanity".

Although suitable employment was found for 70 - 80% of the patients, and the small Asylum garden produced 11,441 lbs of vegetables as extra food for the patients, "it would be a great boon could an acre or two of land adjoining our walls be procured and enclosed for the use of the Asylum. This would enable congenial work to be found for many patients now less suitably employed, and entirely supply the Asylum with vegetables."

Shortage of accommodation

Once again, there were complaints that the staff of the Asylum was barely sufficient and had not increased in a ratio proportionate to the increase in patients. The result was that recent admissions and acute cases could not be given suitable employment, and violent patients had to be secluded when it was considered that confinement was bad for them. The situation was aggravated by the fact that it was not possible to retain good attendants or recruit any as the rate of pay compared unfavourably with either that of the Police or Prison Subwarders.

Further steps were taken in 1894 to relieve the shortage of accommodation. Arrangements were made for the repatriation of quiet and harmless Chinese patients to China and the transfer of Indian patients back to India. These steps relieved the Asylum of a number of chronic cases.

The death-rate rose to 30.07%. The chief causes of death were as usual phthisis, dysentery and diarrhoea. The high rate was attributed in some degree to overcrowding and other insanitary conditions.

An additional infirmary ward was badly needed for the sick who were distributed over various parts of the Asylum which made treatment difficult.

The prevalent type of insanity of the new admissions during the year was, as usual, acute mania with a tendency to dementia. Many of them were in poor physical health.

The recovery rate was 40.40% as compared with 33.17% in 1893.

Cholera Epidemic

There was an epidemic of Cholera in Singapore during the middle of 1895, including a considerable outbreak in the Lunatic Asylum, where there were 30 cases and every case ended fatally. A special Commission of Inquiry was appointed to enquire into the cause of the Cholera outbreak in the Asylum, and the Municipal water supply was criticised.

During the Cholera epidemic, much of the patients' work was stopped and they had their movements restricted as a precaution against the spread of the disease. The vegetables produced in the Asylum garden were not eaten and not a single patient worked in the vegetable garden.

As a result of Cholera, the death-rate was even higher — 44.45%. The principal causes of death, after cholera, were anaemia with anasarca, heart disease, phthisis, diarrhoea, dys-

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entery and beri-beri. The Medical Superintendent again complained that the existing accommodation for the sick was distinctly defective and contributed to the high death-rate. He asked for a suitably constructed infirmary on the high ground.

Sixty-one chronic cases were repatriated (57 Chinese to China and 4 Tamils to Madras). The result was ample accommodation for 60 more patients, and 13 cases were admitted from Selangor and Johor.

But there was no reduction in the number of female patients who were already overcrowded. It was feared that unless another association ward was built for them, any increase in female admissions would result in native patients being accommodated in the European section of the work-shed or the dining-shed.

Five Coroner's inquests were held during the year. Two of the subjects were lunatic criminals who had died of natural causes. The third died as a result of a fall. The two remaining cases were suicides by hanging, one due to the negligence of an attendant who was dismissed from the service.

The amusements given to the patients were rather limited. There were performances of jugglers and trained animals twice, and a Chinese dramatic entertainment (wayang) once in the Asylum grounds. Fireworks were exhibited twice. Some of the patients were induced to fly kites.

A dramatic performance of marionettes with Chinese music was kindly provided at the charge of a gentleman in the Colony. Thirty volumes of English magazines and illustrated newspapers were presented for the English-speaking section of the patients. The same liberal donor also gave some cigars. A small quantity of Javanese tobacco was daily distributed among the patients, with cigarette papers. Chinese chess was also played.

The staff performed their work satisfactorily with some exceptions. There were cases of gross neglect on the part of the Bengali attendants, in which patients had been allowed to abscond, and in one case (mentioned above) a patient to commit suicide when the most ordinary care would have prevented it.

In 1896, 16 Chinese and Malay pauper lunatics were transferred from Fremantle, Western Australia. In spite of this, there was a decrease in the number of patients due to the repatriation of 61 chronic patients to India and China in 1895, and to the increased death-rate of the last three years.

The ratio of males to females treated was 5.51 to 1. This was similar to the abnormal ratio of the sexes among the Chinese in the Colony.

The ratio of registered insane to the population in the Straits Settlements was 3.80 per 10,000; that for England on 1st January 1896 was 31.38 per 10,000. As pointed out earlier, the favourable rate did not correctly gauge the incidence of mental disease in the Colony. The high death-rate in the Asylum was a large factor in lowering the ratio, and many insane persons were at large, who, if living in England would have been admitted to mental hospitals.

Out of the last ten years (1887-1896), 1889, 1892 and 1894 were the only ones in which there were no cases of Cholera in the Asylum. In 1896, there was a severe case who died in nine hours. As he had been promptly isolated and steps taken to prevent the spread of the disease were successful, no other case occurred.

To prevent the disease being brought in by new patients, one small block in the Asylum was isolated and converted into a quarantine ward, and all new patients were detained there for a week prior to mixing with other patients.

The small vegetable garden had to be destroyed for the purpose of enlarging an airing court, and since then there was no gardening work with the exception of weeding and rolling for convalescent and quiet patients.

As the result of a suicide by hanging in 1896, further precautions were introduced (because of the structure of the Asylum and shortage of staff):

"This man was known to have been suicidal, having made two determined attempts in the previous month. What were considered to be sufficient precautions were taken, but nonetheless he tore open his Chinese pillow, the frame work of which is split bamboo, and with this he plaited a short rope and hanged himself from the bars of the window of his single room. The night attendant who was in charge of 30 single rooms had seen this patient but a few minutes before he discovered him hanging. The structure of the Asylum is undoubtedly to blame for this unfortunate occurrence, for every single room has a barred window placed immediately above the fixed bedstead and in easy reach. With accommodation for just over 300 patients, there are no less than 148 single rooms such as described above, making suicide by hanging (a favourite mode among Chinese) easy, not to say suggesting it, as pointed out when I first took over charge of this Asylum in 1888. Every patient of known suicidal tendency now sleeps in an association ward with a special night attendant, and a similar mishap is unlikely to occur again. The Chinese are without exception, when suicidal, the most persistently suicidal of any of the numerous races with whom I have had any dealings."

The water supply gave a lot of trouble. The supply although good was not continuous and available only at night. This necessitated the storage of water in large open tubs all over the Asylum for cooking, washing and cleaning purposes, and into these tubs dirt of all descriptions were blown in. Although this water was not for drinking, the lunatic patients often drank it. For a time, Jeye's Fluid was freely poured every morning into each tub to make the water unpalatable, until the stock ran short! Strict measures were enforced. All water for drinking purposes was first filtered and then boiled, and the staff had it instilled into them the importance of preventing patients drinking any water that had not been specially prepared for them. These measures nearly stamped out the acute diarrhoea which had formerly been very prevalent.

A lot of work was carried out in the Pathological and Bacteriological Laboratory which included water analysis, the study of leprosy and nerve degeneration in beri-beri. Attempts were also made to find an organism responsible for beri-beri without success.

The health of the Asylum during the year was appalling. Between 33% and 43% of the patients were at any one time under treatment for anaemia with anasarca, beri-beri, dysentery, diarrhoea and pulmonary tuberculosis. A special report on the subject was made to the Government in which it was pointed out that "the hygienic condition of the Asylum was most defective, more especially the blocks of the lower levels, which suffer principally from dampness, and impure air from its inadequate renewal. The prevalence of phthisis and perhaps also dysentery and beri-beri may be taken to give a fairly accurate index of the sufficiency or otherwise of dryness and ventilation; and dysentery, diarrhoea and phthisis, occurring spontaneously as they do, can only be regarded as a failure to attain perfect sanitary conditions."

Commission of Inquiry

A Commission of Inquiry was appointed to inquire into the cause of the large amount of sickness and the high death-rate. Their Report presented to the Government the same year. cited as the primary causes: undesirable site, unhealthy surroundings, bad conformation of ground with stagnant water lying close to the surface, bad arrangement of buildings and bad ventilation. They also stated that other general causes, which affected the outside public in an equal degree, also contributed to keep the death-rate abnormally high.

Syphilis was just as prevalent as in previous years. Once again, a dogmatic statement was made:

"During the past 9 years (1888-1896) we have had no case of General Paralysis in an Asiatic, and it is not to be wondered at when we consider their simple life, few or no worries, and the fact that there is practically no struggle for existence amongst them in the Straits Settlements. In a country where there is no cold, but little indulgence amongst Natives in alcoholic excess, where food and lodgings are cheap, and the least possible clothing is required, a disease originating in anxiety, mental worries and great excesses, is little likely to develop."

It was believed that "as in previous years, malarial fever was the cause of the insanity of many of our admissions. The insanity from this cause is usually most acute, quite distinct from delirium, generally of short duration, and nearly invariably results in recovery."

Anaemia with anasarca had been constantly prevalent since the new Asylum was opened in 1887, and was a scourge during 1895 and 1896. The cause was not known although some believed it to be a modified form of beri-beri.

Causes of Insanity

Dr Ellis stated again the difficulty in elucidating the causes of insanity in the Asylum "The study of the mental characteristics of uneducated and semi-savage races (sic) is most difficult, and before any useful work can be done, it is absolutely necessary that a thorough knowledge of their mode of life, their normal mental state, their theories as to witchcraft, ghosts and dreams, and their folklore be gained. Add to the above a working knowledge of four Chinese dialects and three or four other languages (necessary in this Asylum), and the difficulties became next to impossibilities. The majority of our patients belong to the lowest classes, with minds quite unable to grasp the relations of cause and effect, except in the customary affairs of life, and so constituted that anything outside their practical knowledge is, as a rule, given up as being incomprehensible. It is rare ever to be able to see the relatives of patients, most cases being brought to the Asylum by the Police on an Order from a Magistrate. The descriptive rolls, usually filled up by a Police Inspector on the information of a Native Constable, are most incomplete and vague and therefore, useless."

A clinical trial using Thyroid extract 10 to 15 grains three times a day for six weeks in the treatment of patients was started. Two female patients, both of whom were suicidal, melancholic and troublesome showed marked improvement on this regime and became cheerful and industrious. (Could they have been suffering from myxoedema madness?)

The average cost of patients per head for 1896 increased to \$78.14 per annum. This was due to increase in the price of food and also to the large amount of extras, such as milk, bread, eggs, alcohol, etc required by the sick. This trend persisted, never to halt again.

Regarding amusements, the *Lat Pau*, a daily Chinese paper, was taken in for the first time, and was much appreciated, "a beaming crowd was to be seen seated round the reader." However, the English language paper was stopped, and old newspapers from the General Hospital were procured from time to time for the few European and Eurasian patients.

The building of a few quarters in the immediate neighbourhood of the Asylum for married attendants had not yet begun.

In 1897, there was still no continuous supply of water.

The health of the Asylum during the year was no better than in 1896. Both beri-beri and dysentery were more prevalent than they had ever been before in the Asylum. Preventive measures were of no avail and the Asylum was looked upon as "a pest-hole of beri-beri."

During the latter part of the year, some improvements were made in the surface and sub-soil drainage of the Asylum, in the hope that sickness would be lessened thereby.

Pathological work showed that the disease called in previous years "Anaemia with anasarca" was really beri-beri, the nerves primarily attacked being those of the sympathetic system.

The recovery rate of 49.97% (males 50.82 and females 34.61) was the highest ever noted in the Asylum. This was considered exceptionally good when the large amount of sickness which prevailed throughout the year was taken in account, and compared very favourably with that of the English Asylums which like the Singapore Asylum, received all types of patients.

Owing principally to the amount of sickness prevailing throughout the year, the number of inmates usefully employed fell by about 50%.

The average cost of patients per head for the year was \$109.54 as compared with \$78.14 in 1896, \$68.21 in 1895 and \$57.76 in 1894. This was due to food and milk having gone up in price year by year, to the amount of extras required for the large number of sick, and to special allowances for the staff.

In 1898, the Lunatic Asylum showed a very good recovery rate, but also a very high death-rate, which was still kept up by beri-beri which continued to occur in the Asylum in spite of all the measures which had been taken.

There was a considerable decrease in the number of male patients. This was due to three causes: a largely diminished admission rate during the past two years, a steadily increasing death-rate, and the continuance of a good recovery rate. The average number of female patients did not vary much and from time to time patients had to be refused admission owing to lack of accommodation.

Beri-beri was even more prevalent than in 1896 and 1897. Dr Ellis recommended better ventilation of the lower levels of the Asylum and the construction of a small hospital for beri-beri patients on the sea coast at Pasir Panjang. He also stated that unless these measures bore more fruit than other former attempted remedies, the question of removing the whole Asylum to some other site had to be considered. In 1896, 40 of the 85 deaths were due to beri-beri; in 1897, 48 out of 81; and in 1898, 55 out of 95. In 1898, out of an average daily number of 208 patients, 201 different patients were at one time or another under treatment for beri-beri.

Six quarters for married attendants, situated a short distance from the main gates, were at last built and occupied at the end of the year, and satisfied a long felt need.

Need for a Garden and Farm

Dr Ellis once again emphasised that the advantages of a kitchen garden and farm were inestimable, and regretted that neither was available. The necessary out-door work would be interesting to the majority of patients and be curative. Sedentary pursuits could be abolished in favour of work of a healthier variety, and besides, the farm would be a source of considerable income, especially in diminishing the cost of maintenance. At the moment, everything had to be bought except clothing. With a farm, the Asylum could grow all the vegetables needed, rear poultry, pigs and goats and run a dairy.

In 1898, the recovery rate was 42.24%. Sixteen patients from Selangor were transferred to the newly-opened Malay States Asylum in Perak, Federated Malay States.

The death-rate was very high - 45.67% (10% higher than 1897) mainly due to beri-beri. Beri-beri continued to prevail in the Asylum during 1899, but the disease was not so fatal, only 29 deaths as against 55 in 1898. Favourable results had been obtained by sending beri-beri patients in batches to the ward by the sea-side at Pasir Panjang.

Beri-beri and a Ward at Pasir Panjang

A ward to accommodate 20 patients had been built on the sea beach at Pasir Panjang, a distance of 4 miles from the Asylum for the treatment of beri-beri patients. This ward was opened on 19 June and the first batch of patients sent down. With the exception of one or two, all patients treated there rapidly improved. However, Dr Ellis was cautious:

"I am convinced, early though it be to make definite statements, that up to the present the ward is a success, a great success; patients recovering in a manner I have never seen them do before. I do not pretend that recovery is in all cases permanent, for relapses upon return to the Asylum are frequent, and I think to be expected, as the place is saturated with beri-beri, but we send them down again and again with satisfactory results. My only apprehension is that possibly in time the ward and its surrounding compound may become also saturated with poison and so lose its powers for good, but the building being but plank and attap could easily be burnt and re-built at small cost. There is no accommodation there for violent and troublesome patients nor is the place fitted for those with suicidal tendencies; so but a limited proportion of our patients are enabled to go down. Also from time to time, the male patients, among whom beri-beri is the more prevalent, have to make way for the female patients, who have already been sent there for two periods of a fortnight each with marked advantage."

The number of admissions was less than in former years on account of the opening of the Asylum in the Federated Malay States in 1898.

The average cost of patients per head for the year was \$145.65 as compared with \$120.36 for 1898, more than double the rate for 1894. The reasons were the loss of paying Malay States patients, fewer patients, the impossibility of diminishing the staff because the many buildings of the Asylum were scattered and the increased cost of every article purchased.

It was noted that it was curious that no Bengali attendant had ever suffered from beri-beri, nor had any European or Eurasian patient.

High death-rate again

1900 showed a very high death-rate caused chiefly by beri-beri (51 deaths) and a outbreak of cholera (16 deaths). The mortality would have been considerably greater but for the beneficial results derived from sending the patients in batches to the seaside ward at Pasir Panjang. Beri-beri was prevalent both on the male and female sides of the Asylum during the later half of the year, and the outbreak of cholera with 18 cases occurring in November.

The recovery rate from mental diseases was low, only 31.6% (the percentage of males who recovered was 34.4, of females only 16.6). This low recovery rate was due chiefly to the high mortality from cholera and other diseases among patients who might have been discharged.

Ninety-three males and 30 females died during the year giving a percentage of 68.3. This very high death-rate was the subject of a special report by the Medical Superintendent in November 1900, in which he pin-pointed the causes:

- (1) The outbreak of cholera causing 16 deaths.
- (2) The prevalence of beri-beri and simultaneous outbreaks on both male and female sides of the Asylum, so that full advantage could not be taken of the Ward at Pasir Panjang. There were 51 deaths from this disease.
- (3) The large number of cases of dysentery and phthisis, each of which disease was responsible for 16 deaths.
- (4) The general unhealthiness of the year as shown by the high death-rate outside the Asylum.
- (5) The poor physical condition on admission of those who died.

A ward for females was erected at the end of the year adjoining the male ward on the beach at Pasir Panjang, so that both males and females could be sent there simultaneously and it was hoped that more frequent transfers of patients would materially lessen the mortality from beri-beri. Patients sent there as a rule showed rapid improvement, although they were liable to relapse on returning to the Asylum.

The Asylum contractor was fined \$350 for supplying adulterated milk.

In 1901, there was an excellent percentage of recoveries (48%) amongst the insane and also the lowest death-rate since 1897, because of the low death-rates of the "chief killers": beri-beri, 15 deaths against 51 in 1900, phthisis and dysentery, 8 each instead of 16. The death-rate was 34.15%, an improvement from the previous year's 68.3%, but still considered very high.

The Asylum had been quite free from dysentery until a patient admitted from Penang suffering from this disease infected other patients in his ward and started an outbreak which caused eight deaths. Since then every new patient was isolated for some days before mixing with other patients.

Dysentery was particularly troublesome to deal with in lunatics because of the difficulty in getting them to take medicines and proper food, and preventing them from swallowing any refuse matter or filth they could lay their hands on.

The ratio of registered insane to the population in the Straits Settlements was 3.01 per 10,000 as compared with 3.80 in 1896; that for England in 1896 was 31.38. The favourable rate did not quite correctly gauge the probable prevalence of mental disease in the Colony. A number of factors contributed to this:

- (a) the high death-rate was a factor in lowering the ratio.
- (b) not all the insane, especially those only slightly demented, were admitted into asylums as in England.
- (c) a large proportion of the population was alien, and recovered patients frequently returned to China, India or Europe, never to return, but they might have relapsed in their own countries.
- (d) the majority of the population were selected males between the ages of 20 and 45 (immigrant labourers).
- (e) there was no general paralysis of the insane among Asiatics (sic).
- (f) there was little puerperal insanity among Asiatic females (sic).

The beri-beri wards on the sea beach at Pasir Panjang had for the first time been in constant use throughout the year with the exception of the first three weeks of September, when the patients were brought back to the Asylum and the Wards thoroughly disinfected. The treatment was most successful and consisted of the usual remedies plus prolonged sea bathing and rubbing.

The percentage of patients attacked with beri-beri was over 60%, roughly the same as that of the last four years, and this showed that the marked reduction in the deaths was due to a better recovery rate and not due to a reduction in the incidence of beri-beri. It was suggested that should the good results continue for the next few years, the Government might consider transferring the whole Asylum to Pasir Panjang, where there would be other advantages, eg regular walking exercise could be given to the patients outside the Asylum which at present was impossible in the crowded neighbourhood in which the Asylum was situated; the Asylum could run its own dairy farm, rear pigs and poultry, thus providing to the patients useful and healthy occupation of a suitable nature, more conducive to mental recovery than the sedentary work only possible at Sepoy Lines.

From the beginning of 1902, a Coroner's Inquest, as required under the new Criminal Procedure Code, was held upon all patients dying in the Asylum.

A small epidemic of cholera broke out in November, attacking one attendant and 9 patients. Of these, the attendant and 5 patients recovered and 4 patients died. The disease had been introduced from the Town by a patient after admission. The patients were treated in a shed outside the Asylum walls and the outbreak ceased in three weeks.

Beri-beri remained endemic throughout the year. There were 99 new cases compared with 102 in 1901, but there was an enormous fall in the death-rate from this disease, from 9.15% in 1901 to 2.3% in 1902. This success was attributed to the beneficial results of treatment in the beri-beri Wards situated on the seaside at Pasir Panjang. The Medical Superintendent belonged to the school that believed that beri-beri was a "place disease"; that the soil and buildings were infected; that patients inhabiting them were liable to absorb the poison whatever it was; that this poison absorbed in sufficient quantities was the cause of beri-beri, and disinfection was largely relied on to combat the disease.

Treatment at Pasir Panjang

The treatment was as follows:

"The patients at Pasir Panjang bathe in the sea, always once and sometimes twice a day for half an hour at a time and during that time they are massaged. Their clothing is changed twice a week, and prior to washing, is soaked in 1/2000 perchloride of mercury for an hour. Blankets are soaked in the same solution weekly. All bed boards remain in the sea during a tide once a week and are then swilled in perchloride prior to drying. All floors, verandahs, rails and walls are thoroughly washed with sea water twice a week and then sluiced over with the perchloride. Once in from a week to ten days the sand of the compound above the high water mark, and of the paths, etc is scraped up to the depth of one to two inches and carried in baskets below high water level to remain a tide before being replaced. A sunny day is invariably chosen for this work. The diet is the same as for the patients at Sepoy Lines, tea only being used for drinking purposes. All cooking utensils, plates, mugs, etc are washed twice a week in perchloride and then rinsed in boiled water before drying.

To which of any of these precautions our success up to the present is due, I cannot say, but the fact remains that the death-rate has marvellously decreased."

As a result of the success in reducing the death-rate in beri-beri, it was decided to build another Ward (the third) early the next year at Pasir Panjang for males, and when completed would increase the accommodation, adequate for 60 men and 50 women.

The recovery rate in 1902 was 56.6%, the highest the Asylum ever had; and the death rate was 24.14, the lowest for the past 10 years.

Lunatic Asylums Act 1858 Amendment Ordinance

On 6 June 1902, the Attorney-General introduced the Lunatic Asylums Act 1858 Amendment Bill in the Legislative Council. Under the 1858 Act, an Indian Act, which was still in force in the Straits Settlements, a lunatic was not allowed to be moved from his native place and put into a lunatic asylum in another district. This was sensible if the lunatic had to be moved a long distance, and if transport and communication were as difficult and primitive as when the Act was passed, but it was no longer so. The amendment was to allow lunatics from Penang and Malacca to be brought to Singapore to benefit from the advantages of treatment in the Singapore Asylum.

The Bill was read a second time on 13 June, went through the Committee stage on 20 June, and read a third time and passed on 18 July 1902. (Ordinance XVII of 1902 - "An Ordinance to amend an Act relating to Lunatic Asylums, being Indian Act XXXVI of 1858").

In June 1903, the female patients were brought up from the seaside ward at Pasir Panjang to Sepoy Lines; within a week 5 cases of cholera, 3 being fatal, occurred. The patients were at once transferred back to Pasir Panjang and the epidemic ceased. This was the second time this had happened. "There can be little doubt that the female side of the Sepoy Lines Asylum is a pest hole of both cholera and beri-beri, and its site and construction are such that but little can be done to improve the insanitary condition."

Beri-beri, endemic in the Asylum since its opening in 1887, showed signs of dying out. Only 18 cases occurred amongst the patients during 1903, compared with 99 in 1902, 102 in 1901, 133 in 1900, 121 in 1899 and 155 in 1898.

The recovery rate from beri-beri also showed improvement after the opening of the seaside Ward at Pasir Panjang. Two other wards had been built since, and the disease appeared to be quite stamped out from the female side, and the few cases that occurred on the male side at Sepoy Lines rapidly recovered when sent to the seaside and did not relapse upon return as formerly they so often did. The mainstay of treatment was "thorough disinfection of all personal linen, bedding, furniture, crockery, wards, compounds, etc and to this I imagine our success is mostly, if not entirely due."

There were 9 escapes during the year, 3 of whom were women. The Medical Superintendent facetiously quoted: "There is no art whatever in absolute prevention of all escape, but there is a large scope of art in providing that the right patients only shall have the chance." Most of the patients in the Asylum were allowed considerable liberty and as this was so material to the comfort and health of the great majority, the occurrence of a few escapes was no excuse to put into force a system of surveillance which would be irksome to many. Nearly all those escaping were convalescent, and others were quiet and harmless.

General Paralysis of the Insane

For the fourth time, Dr Ellis propounded his theory of General Paralysis of the Insane in Asiatics:

"I have yet to chronicle my first case of General Paralysis of the Insane in the person of an Asiatic, notwithstanding the fact that 3,168 Asiatics have passed through the Asylum since I first arrived in 1888. This disease is considered by practically all European authorities to be of Syphilitic origin; Syphilis is even more prevalent here than in Europe, so there can be little doubt that other factors are necessary to initiate the outbreak. Whether those factors are anxiety, mental worries and great excesses, as was formerly thought, I cannot say, but in this country there is no cold, but little indulgence amongst natives in alcohol, food and lodgings are cheap, and the least possible clothing is required, so stress is practically unheard of."

The prevailing type of insanity in the admissions was, as noted in 1893, "a low form of Mania with few acute outbreaks, but little violence (delusions and hallucinations being comparatively rare) with a tendency to rapid recovery or equally rapid change to dementia. Cases of Sub-acute Melancholia are becoming more frequent and there has been a steady increase in this form of insanity since 1896 when I reported that cases were somewhat rare and never very acute."

It was still regretted that there was no land available for cultivation, and "though industrial work has its uses as a curative agent for the insane it falls far short of farm labour."

An European attendant, long needed, arrived from England in October, and took over charge of the European cottage. The Medical Superintendent was very disappointed with his limited experience although a thoroughly trained man with several years' service had been specially asked for.

Dr H J Gibbs, the Assistant Medical Officer, returned from leave on 18 November after having successfully passed the

examinations for the LRCP London and MRCS England. He also took the Certificate in Psychological Medicine.

Evidence of past and present venereal disease in the admissions was common. Over 24% had suffered from syphilis, a percentage which had gradually increased from the 13.48% of the 1896 admissions.

From 13 October 1903 to 13 October 1904, all patients were fed on "cured Bengal rice" and during this period only one case of beri-beri occurred in the Asylum. On 14 October 1904, they went back to eating "uncured Siamese rice" and by December there were 15 cases of beri-beri coming from all parts of the Asylum, though none occurred amongst the 20 males and females kept on Bengal rice as controls. However, the Medical Superintendent did not think that the results were convincing enough to prove that the consumption of "uncured rice" was the cause of beri-beri.

For the first time in eight years, 3 patients committed suicide by hanging. All had torn their blankets, made ropes and hanged themselves, two to the bars of the gates of their single rooms, and one to the bars of the window. As had been pointed out in 1888, the structure of the Asylum was undoubtedly to blame for those unfortunate occurrences, for every single room had a barred open window placed immediately above the fixed sleeping bench, and in easy reach, and was closed by a gate made of fancy ironwork. The Asylum had 148 such single rooms. Thirty single rooms at night were under the charge of one attendant, and these rooms were situated in six separate blocks of 5 rooms each, necessitating some considerable time in going round, and he could not be blamed for the mishaps. After the re-organisation following the incidents, every patient with known suicidal tendency slept in an association ward with a special night attendant. (This rule had been instituted in 1896, but evidently had been allowed to lapse.)

Towards the end of the year, the Asylum became very overcrowded, and the health of the patients suffered, many being attacked with dysentery and diarrhoea. But the death-rate was 22.01%, the lowest since 1893. One hundred and four patients were discharged recovered equal to a recovery rate of 40.94% which was a marked improvement upon 1903 and considered satisfactory. Twenty-three patients were discharged "relieved" and 11 "not improved" to the care of their friends. A far larger number of patients were fit to be discharged in this way, but their friends and relatives were uncontactable.

Proposal to build new Mental Hospital

It was reported that it had been decided to construct a new Asylum upon modern and sanitary lines as soon as possible, and an excellent site with sufficient land for a farm had been chosen near Reformatory Road (now part of Clementi Road, Bukit Timah).

In 1905, the site selected for the new Asylum at Reformatory Road had to be abandoned as impracticable, and a fine site of 400 acres forming part of the Trafalgar Estate along Eu Chu Kang Road (Yio Chu Kang Road), 1.5 miles from the Electric Tram Terminus at Serangoon Road purchased.

From 1 May to 25 May 1905, there occurred 30 cases of beri-beri amongst patients fed on "uncured Siamese rice", none occurring amongst those fed on parboiled (unpolished) rice or on special diets of meat, fish, eggs, etc but excluding rice.

Unpolished rice for all patients

On 26 May 1905, by order of His Excellency the Governor, all the inmates were given parboiled rice and from that date to the end of the year only five cases occurred amongst those who were free from the disease on admission. This great reduction in the incidence of beri-beri indicated definitely the value of parboiled rice as a prophylactic.

There was an outbreak of cholera in October amongst the inmates at Pasir Panjang. On 1 November, all the patients with

the Matron, Dresser, Ayahs and Attendants were transferred to the Quarantine Station on St John's Island. With their removal the outbreak ended. After the removal of the patients and staff to the Quarantine Station, the block of outhouses which had been occupied by the last two cases were pulled down and burnt. Drinking of well water which was supplied for bathing purposes was blamed. One male, five female patients and an Ayah had been attacked, and three female patients and the Ayah died.

One patient was admitted from Christmas Island in 1905.

The number of abscondences (12 males and 2 females), was higher than it had been for many years, and was due to the removal of the spiked revolving bar at the top of the fence, which enabled the patients to escape from the Asylum with utmost ease. In some of the cases, negligence on the part of the attendants undoubtedly contributed to their escape and those attendants were duly punished.

One hundred and six patients were discharged recovered equal to a recovery rate of 42.1%. Thirty-one patients were discharged "relieved" and 15 "not improved" to either the care of their friends or transferred to the Asylums in British India and at Buitenzorg in Java.

Regarding the industries, about 20% of the patients could not be made to do anything; another 16% made believe at work, but the balance, 64%, were very industrious and were employed in the loom sheds spinning cotton, kitchen and household duties, scrubbing and cleaning of cells and wards, in sweeping about the grounds and keeping the roads free from grass. Tobacco, fruit and other extras were given to encourage them.

The European patients amused themselves with draughts, chess, cards, cricket, tennis, football, and they passed the warmer portions of the days in the verandahs reading magazines and papers which the General Hospital kindly contributed.

Owing to the larger number of European patients it was deemed advisable to recruit two more trained European attendants from some of the English Asylums. They arrived in June and July 1905.

Medical School in Lunatic Asylum Buildings

The Medical School, known as the Straits and Federated Malay States Government Medical School (in later years, the King Edward VII College of Medicine), began its first session on 3 July 1905. The School was located in the old Female Lunatic Asylum buildings, Sepoy Lines, which had been altered and equipped for the purpose. The female patients were accommodated in the wards at Pasir Panjang.

Building of new Mental Hospital postponed

In 1906, it was decided to postpone indefinitely the building of the new Asylum at the Trafalgar Estate.

Dr Ellis reported, "the first case of General Paralysis of the Insane that I have ever observed in a pure blooded Asiatic occurred during the year, though I have been in charge of this Asylum for nearly 19 years. The patient, a male Chinese, had suffered from Syphilis. The case was somewhat advanced and he died within 9 months. A portion of his brain has been sent to Dr Mott, the Pathologist to the London County Asylum, for examination."

In April, a small epidemic of cholera occurred, the 6th outbreak since 1900. An attendant and twelve patients were attacked and all died. Patients from the lower levels of the Asylum where the cases occurred were sent to the Quarantine Island. However, at St John's Island, 47 of the patients and some of the staff developed malaria, and they had recurrent attacks of fever after their return. Also on the Island, 6 patients contracted dysentery and 4 died.

No case of beri-beri originated in the Asylum, and two patients admitted with the disease made rapid recoveries.

Bowel diseases as in past years had been most prevalent, especially in the badly drained and overcrowded lower levels; more than a quarter of the total deaths occurred from enteritis, dysentery and diarrhoea.

When the Matron resigned, the Governor asked the Secretary of State to recruit a successor. In his despatch, to the "particulars of office of the Matron, Lunatic Asylum Singapore", he added his recommendations which are worth quoting as they give an interesting picture of the conditions then:

"The Female Asylum in Singapore is situated 5.5 miles from the Town and is quite isolated. The patients and attendants speak various Oriental languages but no English. The only other resident officer is an English-speaking Eurasian Dresser. The quarters are a thatched wooden house.

In these circumstances, I am strongly advising that a strong-minded, well-educated woman with no Asylum experience would be more suitable than the ordinary type of Asylum Nurse, as the latter would probably soon leave the service and the former can easily be trained."

In 1907, there was a favourable recovery rate of 44.67%, and the lowest death-rate of any year, only 19.52%.

Sections of the brain sent for examination to Dr Mott, Pathologist to the London County Asylum, the previous year confirmed the diagnosis of General Paralysis of the Insane. Dr Ellis claimed that this was the first case he had come across in a "pure-blooded Asiatic, a Chinaman", although he had been on the look-out for it for many years.

The annual cost of maintenance per head was \$148.20 compared with \$151.44 for the previous year.

Owing to the success of the treatment of patients from the Lunatic Asylum suffering from beri-beri on the sea coast, it was decided to build wards on the beach at Pasir Panjang, adjoining the Asylum wards, for the accommodation and treatment of beri-beri patients from the General Hospital, Tan Tock Seng Hospital and the Gaol.

Five wards were built each with accommodation for 40 patients; one for the prisoners, one for the General Hospital, and three for Tan Tock Seng Hospital. The wards were ready for use early in 1907. At the time, no beri-beri existed either in the Gaol or in the General Hospital, and as the Lunatic Asylum had two of its wards condemned as unfit for further use, the prisoners' ward was taken over for the accommodation of 40 male chronic lunatics and the General Hospital ward for an equal number of female lunatics, while the Lunatic Asylum wards were being re-built.

The Medical Superintendent and the Matron of the Lunatic Asylum were in charge of the new Beri-Beri Hospital.

In 1908, it was reported that cases of alcoholic insanity among Chinese were increasing. Besides the ordinary forms and Delirium Tremens, there were patients who remained acutely maniacal for 1 to 6 weeks and then recovered rapidly. It was believed that the cheap spirits they drank contained toxic substances which caused this syndrome.

Another case of General Paralysis of the Insane in a "pure-bred Chinaman" was reported by Dr Ellis, the second case during his 21 years' charge of the Asylum.

During the year, there were 49 cases of dysentery, with 10 deaths, and 23 cases diarrhoea with no death. With few exceptions these cases occurred in the overcrowded blocks of the lower levels of the Asylum. Under existing conditions, it was impossible to isolate patients suffering from any disease as all available accommodation was urgently needed and had to be used. Three deaths occurred from tuberculous enteritis. Experience had shown that with any marked overcrowding bowel disease was bound to break out and run rife notwithstanding all available precaution. Poor sanitation and low standards of

personal hygiene also contributed to the high incidence of dysentery.

The 1908 recovery rate of 30.19% was the lowest since 1888, and as there was neither variation in the class or type of patients admitted, this poor result was attributed to the overcrowding of the Asylum and the difficulty in allotting suitable employment to patients "one of the best aids to mental recovery."

In 1909, dysentery and pulmonary tuberculosis accounted for 46 of the 78 deaths. The overcrowded state of the Asylum was largely responsible for the prevalence of both these diseases. More accommodation was urgently needed, both for the sick and for those who were physically well.

Dr Ellis was promoted Principal Civil Medical Officer on 31 December 1909, and Dr Gibbs, Medical Officer, Tan Tock Seng Hospital (formerly of the Lunatic Asylum) was appointed Medical Superintendent, Lunatic Asylum to succeed him.

A new European attendant came out from England towards the later part of 1909, making a total of four European attendants at the Lunatic Asylum.

A serious outbreak of cholera occurred in July 1910. The sick were treated in a shed erected for the purpose outside the Asylum walls. After the ninth patient was attacked, 194 of the native patients were transferred to the Quarantine Station on St John's Island and all the lower levels of the Asylum vacated. Of the nine cases, eight died.

With the removal of the 194 patients no further cases occurred amongst the 50 Europeans, Eurasians and natives left behind at Sepoy Lines; but, amongst those transferred cases continued to occur daily at St John's Island. There were 39 cases at St John's Island with 30 deaths. In all, there were 48 cases with 38 deaths.

No case occurred after the return of the patients from St John's in August.

During their absence, the whole of the Asylum was thoroughly disinfected with formalin; the walls scraped and limewashed, the paint on the iron bars and doors scraped and the iron and wood-work of all the cells and wards painted.

At that time, cholera was also very prevalent elsewhere in Singapore. There were 157 cases with 125 deaths. A study of the Asylum history showed that it never escaped whenever there were outbreaks of cholera in Singapore.

There was no case of beri-beri and this "immunity" was due to the adoption of parboiled rice as an article of diet. A new rice called "No. IV white undermilled asylum rice" was introduced on 21 December 1910 and exclusively used at Sepoy Lines. It was more palatable than parboiled rice. No cases of beri-beri occurred amongst patients fed on it.

The Asylum was no longer a "pest hole of beri-beri".

The percentage of insanity in the population was considerably lower in the Straits Settlements than in England and Wales. 5.27 per 10,000 against 36.1 per 10,000. It was believed that the better local figures were due to:

- (a) Abnormal ratio of females to males in the population and so less puerperal insanity.
- (b) Abnormal numbers of very old and very young.
- (c) Little alcoholism and practically no stress.
- (d) Overcrowding of the Asylum predisposing to an abnormally high death-rate.
- (e) Deportation of the many of the partially insane, imbecile and weak-minded to their own countries.

Cholera, dysentery and tuberculosis accounted for 79 of the 115 deaths in 1910. The Asylum was very overcrowded and the storeroom was converted into an association ward for 25 patients, but this only temporarily relieved the congestion. It was recommended that either a new asylum be built, or land to the south of the Asylum purchased to construct an association ward for 50 patients and single cell accommodation for 30 patients.

As the land for a new asylum had been purchased some time previously, the doctors preferred a new asylum to be built to accommodate 500 patients rather than to temporise with additions and alterations to the existing buildings.

A futile attempt was made to induce the Chinese Government to repatriate 100 of their subjects in the hope of relieving the overcrowding.

In 1911, cholera broke out in the wards at Pasir Panjang in August. Three days after the first case occurred, all patients were transferred to the Quarantine Station on St John's Island. There were eleven deaths and the patients returned to Pasir Panjang on 19 September. The authorities could not account for this outbreak at Pasir Panjang, 5 miles from the Town, although cases of cholera were being reported in Singapore at the time.

There was also a bad epidemic of malaria in Singapore, and the Lunatic Asylum did not escape. Staff and patients came down with the disease. At one time, both Dressers, the Steward, the Clerk and the Matron were seriously ill. Of the many patients who suffered, 9 died.

The experiment of feeding patients with undermilled Siam rice to prevent beri-beri which commenced on 21 December 1910, was continued until 30 November 1911, when it had to be abandoned as the Government of Siam refused to export any more on account of the rice famine. During this period no beri-beri occurred in the patients so fed.

The death-rate was 24.3%. Cholera, dysentery and tuberculosis were largely answerable for this high rate. The recovery rate was 36.81%.

There were several suicide attempts made during the year and many minor casualties and accidents.

An interesting case to note was that of a malaria patient with an enlarged and diseased spleen, who ruptured his spleen by vomiting and died within two hours.

A cottage consisting of two bedrooms and a 3-bedded dormitory for European females was erected at Pasir Panjang. This met a long and badly felt need.

Clinical teaching of Psychological Medicine continued to be given to the students of the Medical School.

The average daily number of patients had steadily risen from 292 in 1907 to 393 in 1912, the latter number taxing the accommodation to the limit. The question of building a new asylum or erecting wards for chronic and irrecoverable patients at the Tanjong Rambutan Asylum, Federated Malay States, was under consideration.

Two hundred and thirty-eight patients were admitted during the year. The number of male admissions (205) was with the exception of the year 1904, the highest on record. Amongst the admissions were 1 male and 3 female Europeans.

The death-rate was 16.31%, the lowest on record. Dysentery and tuberculosis had, as usual, taken heavy toll. Twenty-two died from the former and 13 from the latter complaint. These two diseases contributed more than half the deaths. Cholera accounted for 2 and acute delirious mania for 4 of the deaths.

Three cases of cholera of which two proved fatal occurred in August amongst the male inmates at Pasir Panjang. The

contacts, numbering 73, with one of the sufferers and attendants were removed to the Quarantine Station on St John's Island on 18 July and remained there until 1 September. With their removal the outbreak ceased. At the time, cholera existed in Singapore, but the female patients and the beri-beri patients occupying the adjacent wards were not infected.

During the latter part of 1912 and in the very wet monsoon dysentery was both rife and fatal; many of the cases were of the Acute Bacillary type. Three of these cases were treated with anti-dysenteric serum and they made rapid recoveries.

Malaria was not the scourge amongst the staff it had been in the previous year. In 1911, the Matron, all the Ayahs, most of the male Attendants, the Clerk, Dressers, Steward and members of his family, and the Medical Superintendent's family were attacked. In 1912, only three attendants and the Steward suffered.

The drainage of the gully at the foot of the hill and of the swamp at the back of the Asylum, together with the filling in of the swamp at Kampong Bahru, had helped in the reduction of malaria.

For the first time in three years there was a case of suicide by hanging. The incident was all the more regrettable as it was entirely due to the negligence of the attendant in charge and could have been prevented. The attendant was found asleep on duty.

The number of casualties was high, but the majority were of a trifling nature. This was due to the crowded condition of the Asylum where, owing to the lack of accommodation and space, it was impossible to segregate the troublesome cases, and this led to assaults by patients on one another and necessitated seclusion more often than was desirable.

Something had to be done soon to relieve the congestion. The overcrowding also seriously interfered with the convalescence of the acute cases and tended to render the Asylum insanitary.

No new buildings however were added as the construction of a new Asylum was under consideration.

The number of male attendants was increased by eight. Five were needed at Sepoy Lines to meet the increased number of patients; and three, to take charge of the insane patients under observation at Tan Tock Seng Hospital.

The total cost per hear per annum was \$112.11.

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