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LEPROSY

A Reprint of the Survey made in 1924 - 1927

BY

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7. FEDERATED MALAY STATES

Since 1893 there exists in Malaya an ordinance regarding the control of leprosy. The total number of its lepers is estimated to 1,600. Two kilometers distant from Kuala Lumpur, the capital of the country, is situated the "Kuala Lumpur Leper Asylum", a very old establishment about to be closed.

I visited it with Dr. Richard Green, its medical officer in charge.

The establishment is an old fashioned asylum, rather like a prison built in the center of a piece of ground surrounded by a fence of ten barbed wires.

The asylum consists of about 15 buildings which majority are brick-pavilions, covered with tiles and with ground of concrete. The sewers and drains for waste or rain water are also cemented.

Since 1925 the asylum shelters 500 lepers, all Hindus and Chinese. The institution is overcrowded and the patients have no comfort at all. I saw there Chinese lepers lying on mattresses, doing nothing except smoking opium, this being tolerated as a relief to their suffering.

In Pulau Panjkor, there exists a small asylum with some fifty lepers. These ones used to live with their wives, from whom, death only can detach them.

By the time of my visit, the erection of an up-to-date colony for lepers was planned, 20 kilometers distant from the capital.

I could not more have the pleasure to meet Dr. E. A. O. Travers in Kuala Lumpur. This colleague used, from 1922 to 1925, the treatment known as "Tai Foong Chee", the active principle of which is the flour of the seeds of *Hydnocarpus anthelmintica*.

In 200 cases under treatment, of one to two years duration, improvement was obtained from 70 to 81%, negative attempts being in the proportion of 11.5%. I ascertained this was the unique treatment used in the Kuala Lumpur Leprosarium by the time of my visit.

Travers (1) describes as follows, the preparation of the Chinese formula and its way of being applied. It is a mixture of the seeds of the following plants:

Tai Foong Chee (<i>Hydnocarpus anthelmintica</i>)	-	2	parts
Pak Chut Lai (<i>Tribulus Terrestris</i>)	-	1	part
Toh Man Yan (<i>Cannabis Indica</i>)	-	1	part

The daily dose of these flours is half a drachma, or say, more or less a teaspoonful, to be taken with a little water. This is the classical Chinese treatment of leprosy. Travers, having verified its efficiency, generalized the use thereof, thus modifying the recipe:

Flour of selectioned seeds of *Hydnocarpus anthelmintica* 3 parts
 Idem of *Cannabis indica* - - - - - 1 part

The seeds of *Tribulus terrestris* was deemed as of no benefit. The dose was increased to 2 teaspoonsful a day, one in the morning, another one at night.

Ministering this remedy is most easy. All the patients are placed on a row in the yard of the Asylum. A nursing attendant goes on putting the dose referred to with a spoon, into the mouth of each, meanwhile another nursing attendant follows, distributing water.

The clerk of the asylum, the sole sound employee, accompanies the prescription to make certain that the remedy has been swallowed, with a view to register the dose effectively taken by each patient.

Owing to the simplicity of the method, 350 patients are being treated in half an hour. Improved cases reach 80% in two years, as already mentioned and vary according to the intensity of reactions shown by the patients.

Dr. Travers says: "A moderate reaction is, in almost every case, followed by an improvement, whereas a violent reaction sometimes causes severe suffering which compel to temporarily give up the treatment".

The highest grade of profitableness is to be seen after 2 years remaining under regular treatment.

In 1925, the cost of this treatment 'per capita' amounted to 2 pence monthly.

The chaulmoogra seeds were being purchased for 7 pence a kilogram, from the Siam Industries Limited, Bangkok (Siam).

Replacing the seeds of *H. anthelmintica* by those of *H. wightiana* did not prove to be tolerated; the patients complained of gastric irritation together with nausea. These symptoms were bettered with the use of sodium bicarbonate. This treatment offers the advantage to be extensible to men, women and children, which cannot be done with injections. The chief physical improvement shown by patients is noticeable by an increase of strength and weight.

Travers (2) had personally undertaken the treatment of a group of 31 patients, showing large leprotic ulcers, with injections of tartar emetic, 10% in distillate water, intravenously.

He used a fresh boilt and filtrate solute, beginning with a dose of 5 c.c. (0.50 grs.), the subsequents being 10 c.c. twice a week. The injections affected by Dr. Travers himself, did neither cause any violent reaction nor determine any alarming symptom. Out of 36 lepers with ulcers, 13 were completely cured, 8 improved, 10 remaining unaltered.

Travers concluded that tartar emetic, has only a cicatrizing effect, of no influence however on the nodules, consequently of no curative value for the disease. The author does not give any statement about the total quantity ministered to each cured patient, without undesirable reactions.

To another series of 6 lepers, previously selected, he injected eight weekly doses of 0.45 gm. neosalvarsan, without the least improvement of the illness. Discussing then the advantages of the anti-leprotic treatment, Travers concludes: "I am convinced that, when we are in a position to treat leprosy from an early stage, we shall be able definitely to cure the disease".

In the work about "Segregation of Lepers" which Travers presented to the 5th Congress of Tropical Medicine at Singapore in 1923, many interesting data about the situation of lepers in the Far East are to be gathered, as well as his own ideas about a scheme of prophylaxis a resumé of which follows hereafter.

- 1) Elect a ground fit for agricultural purposes, of 100 acres, far at least 5 miles from any city, 2 from any village, the same to be fenced, in order to avoid free entrance of foreign people.

- 2) Effect a single big building of concrete, to be used as a hospital for very advanced cases or invalids, with separate rooms for treatment, kitchen, administration and warehouse; one or two lodgings for isolation and treatment of higher class patients; a house for watch-people.

- 3) At the beginning, lepers should be accommodated into provisory cheap buildings, the administration supplying them with the necessary material to enable them to build their homes at their best convenience. Thus, in the Leprosarium would be replanted the system of country life they are accustomed to. This plan is identical to the one suggested in 1920 by Prof. Ad. Lindenberg, for certain regions of Brazil.

- 4) Use the proper lepers for all charges in the institution, including that of nursing attendant, subject to small salaries, thus avoiding to admit sound employees who might run the risk of contracting the disease. The unique sound man in charge would be the chief nursing attendant, who could at the same time befit the charge of clerk.

Travers believes that 80% of the lepers are fit for some work, and considers agriculture as the best suitable form of activity for them.

- 5) The patients would work in agriculture 4 hours a day, in groups and by turns, under supervision of a competent person. Their output would be bought by the administrations and the proceeds be added to the regular rations of all the in-patients.

- 6) Around each lodging there would be a sufficient piece of ground to cultivate flowers and fruit trees.

- 7) The lepers would be allowed to organize their regular trade, opening shops for sale of utilities, comfort and sport articles.

- 8) The lepers would receive a contribution to the creation of a club with play and music, and reading rooms, with a small library and newspapers in various languages.

9) The creation of religious temples, would be allowed, and Christian propaganda offered facilities

10) Dr. Travers considers that an establishment of that kind should be visited daily by a European Doctor (native doctors do not enjoy the same influence) who would not only superintend every treatment as also would take interest in the private life of the lepers.

The author thinks also advisable the erection of a lodging place for visitors, relative or friends of the patients, which visitors should obey to special regulations.

In order to prove the possible realization, Travers mentions the Lao Simomo Leprosarium on Sumatra, which he deems a model of agricultural colony and, to conclude, he insists upon sanitary propaganda and education of the public as the most efficient means of prophylaxis against leprosy. For this purpose, a leaflet in three languages, with the heading "Leprosy-Kusha, Penyakit Besar" was published in October 1925 and widely spread out. Between practitioners of the medical class, Travers' work "Leprosy, the results of the Tai Foong Chee Treatment" (January 1925) was largely made known.

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3. The segregation of Lepers. Ibidem, page 406.

8. MALACCA STRAITS SETTLEMENTS

Dr. A. L. Hoops, P.C.M.O. (1) of the Straits Settlements, provided me with full data about frequency and prophylaxis of Leprosy. The Leper Collecting Station of Singapore existed already before 1900, as stated by Dom Sauton (2), with some twenty in-patients who were intended to be transferred to Pulau Jerejak Colony.

By the time of Sauton's visit, there were also Mission Asylums in Perak, Johore, Selangor and Georgetown. During my journey, passing through Singapore, the "New Female Leper Camp at Trafalgar Estate" was just being erected, with capacity for 50 women. The "Male Collecting Camp" capacity was for 40 in-patients. On 31st December, 1923, there were 47; 96 were admitted in 1924, of whom 77 were transferred to Penang, 6 escaped and 12 died, thus remaining 48.

Dr. E. D. Lindow passed the management of the Singapore Asylums to Dr. Eric Delafield. Dr. Hoops informed me that he together with Dr. Dowden and Dr. Taylor, respectively Medical Officers of Singapore, Kuala Lumpur and Penang, are devoting themselves to extinguishing the scourge of leprosy in those territories.

They practise a very severe quarantine over immigrants, "coolies" from Southern India as a rule. Any discovered lepers are readily isolated or sent back to their former living place. By that time, the three Sanitary Departments disposed of 1,484 beds for lepers and were endeavoring to increase that number.

From 1920 to 1924 the Straits Government increased from 630 to 924 (43%) the number of segregated lepers. Dr. Taylor estimates in 1,200 the total amount of lepers for the Establishments in the Straits and Dr. Dowden reckons to be 1,600 the total of those in the Federated Malay States.

Penang is the main centre for male-seclusion. Male-patients are sent to the Isle of Jerejak, women to Jelutong, a suburb of Georgetown, whose asylum, called "Female Camp in Penang", sheltered 40 female in-patients.

Dr. Taylor states as "Colonial lepers" immigrant patients of any origin. He believes in a direct contagiousness of leprosy; he is of opinion that placing incipient cases under treatment in dispensary, may facilitate prophylaxis; he only admits paroling when the patient is liable to be treated at home; he states that 80% of lepers react positively with Wassermann test, according to his own experience.

He says further that Chinese immigrants do not appear anxious to be discharged from the Colony, because in China, they never find assistance, nor receive identical treatment as they are here submitted to.

The administration does not allow marriage between lepers, and people who are already married have to quit from each other, each sex being to be isolated in a different leprosarium.

MALE LEPROSARIUM AT THE ISLE OF JEREJAK

(*Pulau Jerejak Leper Colony*)

On the 20th of January, 1926, I visited in the company of Dr. W. A. Taylor, Chief Medical Officer of Penang, the Leper Colony in Jerejak. From the city of Georgetown to Jerejak, it is an hour trip in a steam-sloop. The leprosarium, which was created by the Government in 1874, comprises a very large spot of the Isle of Jerejak, all covered with vegetation.

We were received at the harbour by the resident physician, Dr. A. H. Wheatley, the Police Hindoos and a band of musicians, mostly consisting of Eurasians (mestizos from Europeans and Asiatics: half blood).

Staff: 1 resident physician; 9 nursing attendants, sound; 4 Hindoo policemen; several employees (coolies) and 119 leprous men in charge. These latter earn a monthly gratification which varies between 2 and 5 S.S. dollars, according to the kind of work they are in charge of.

In-Patients. There were 700 of them, all male. Out of those, 591 were Chinese, 94 Hindoos, 4 Malays, 1 Japanese, and 10 Eurasians, one of which English-Chinese, 1 Filipino and 8 offsprings from Portuguese and Malay. This sympathetic group forms the music band. With two of them, Velasco and Dias, I could speak in Portuguese. The Chinese, notwithstanding being the most advanced cases, would show the happiest of all, and in the course of his 8 years service in the Colony, Dr. Wheatley says he never was claimed by them for wives. They spend their time washing linen, cooking, preparing rice-wine or smoking opium. Among those living in dormitories, each group of 2 or 3 have their own burner, close to their beds. The hospitalized lepers receive food prepared in the general kitchen.

Fresh victuals are sent three times a week from Georgetown, the principal of which are: rice, vegetables, fish, beef, mutton and pork, poultry and eggs. Owing to religious feelings, lots of them prefer to live on rice and green vegetable. The daily cost per capita is 0.75 S.S. dollar, including every expense, also the tissue they receive twice a year to make out their garments.

Lepers have to care for kitchen-gardens, rear poultry: hens and ducks, and swine. Any excess of their output is acquired by the administration. All valid lepers wash their own linen. In their beds (planks over iron pieces) they have only mats and woollen blankets.

Buildings: Beside the residing houses of the managing Doctor and sound personnel, there exist 24 pavilions, of which 2 compose the hospital for helpless cases and small by-places. In one of the pavilions, with 8 individual rooms, live the Eurasians (Portuguese). All the buildings have concreted floors, brick walls and tile roofs. The capacity of this old part was 784 patients. In the farthest eastern part of the isle, they were erecting a new section, for higher class patients, this part comprising 54 houses of the kind "chalet" each one to shelter 4 in-patients. There exist two churches, one Roman Catholic, the other belonging to the Reformed Church. Protestant in-patients are in greater number, their interest making them thus entitled to frequent presents received from North America.

Water: There were two good reservoirs collecting good water from springs in the mountain in the centre of the Isle. There also exist various wells on the spot.

Cleaning and Sewerage: There was no sewer. They still adopt the night soil system. Excretions are buried in the neighborhood of the sea. The closets and bathing-tubs are well built and kept in better condition. The night-soil system is still in use even in important Asiatic cities as Calcutta and Singapore.

The Isle of Jerejak was an important focus of malaria: it is quite wholesome now. Three coolies attend to mosquitoes foci twice a week. Flies also are rather hardly seen. A sanitary Inspector from Penang visits the establishment twice a month. For this reason, sanitary conditions in the leprosarium are first class.

On my way back from the leprosarium, I visited, in the same Isle, a "Quarantine Station" (immigrants infirmary) with place for about 4,500 people.

I saw about 2,000 Tamils (coolies from South India) and Chinese, subject to quarantine for having travelled on board a steamer with cholera cases.

Movement: This old leprosarium sheltered 280 lepers in 1900 (Sauton) (2) and 495 in 1906 (Jeanselme) (3).

Data from other information show out the following movement:

Years	Admitted	Remained
1891 - 1901	150	253
1902 - 1906	152	311
1907 - 1911	177	390
1912 - 1916	174	413
1917 - 1920	152	422

Movement during these last years.

1921	Existed	438	Total	Died
	Admitted	217	655	201
1922	Remained	450		
	Admitted	249	699	186
1923	Remained	498		
	Entered	190	688	140
1924	Remained	539		
	Entered	187	726	130
1925	Remained	584		
	Entered	247	831	117
1926	January 20 existing		700.	

The duration of the illness, for the segregated lepers in the last 3 years was :

Time	1922	1923	1924
1 year	4	5	9
2 years	8	5	10
3 years	71	53	48
4 years	65	34	31
5 years	39	38	40
6 years	15	32	29
7 years	20	5	5
8 years	12	5	6
9 years	1	3	7
10 years	14	10	2
Total of admitted	249	190	187

Treatment: Wheatley (4) who was known to me as Superintendent physician of the leprosarium in Pulau Jerejak, communicated to the 5th Congress of Tropical Medicine, which took place in Singapore in 1923, that the Chinese lepers segregated there, used pills of seeds of the *T. kurzii* which they name "Tai-foong-chee" with which they mix up another drug "Chit-les" supposed to be a gastric sedative, and have shown improved.

By that time, the principal treatments adopted in the leprosarium were the following :

- 1) Sodium Hydncarpate at 3%, intravenously, at the dose of $\frac{1}{2}$ c.c. to 4 c.c., twice a week.
- 2) Mixture of 2 parts of solute of Sodium Soyate at 3%, with one part of Sodium hydncarpate, intravenously and orally.
- 3) The E.C.C.O. of Muir, ministered intramuscularly.

Till then, only three cases had been considered as cured in the colony.

After five years of intensive treatment, with Hydncarpate oil, and Sodium morrhuate and Soyate, the results up to the end of the year 1925 were as follows :

Cured 8; improved 129 (or 17%). The cured cases were not given parole because this is not authorized by the regulations. Thanks to the modern treatment, mortality show a considerable decrease.

TABLE N. 43

Results of the modern treatment in all the Leprosaria of the Straits Settlements.

Total	1920	1921	1922	1923	1924	1925
Interned	655	747	837	729	924	—
Under treatment	152	220	495	448	643	—
Negatives	—	—	4	—	4	—
Greatly improved	—	47	5	—	70	11%
Improved	—	81	33	190	159	25%
Stationary	—	30	35	231	187	—
Worse	—	—	—	9	11	—
Died	113	203	207	150	149	16%
Released	—	—	4	—	—	—
Lesions disappeared	3	—	—	3	—	—

LEGISLATION

The decree No. 63 under the heading "Lepers" was dated 19th of May, 1899 and has been reviewed in 1920 and 1921 and amended in 1924 (5).

The prophylaxis of leprosy in the Straits Settlements is based on this decree, which is resumed here below :

a) Authorizes the Governor to establish asylums for receiving and secluding lepers, as also premises in view of segregating them for treatment.

b) Forbids lepers to practise certain professions (baker, butcher, cook, launder, tailor, barber, servant, nurse, street porter, etc.) and to frequent certain public places, subject to a fine up to 50 dollars or to imprisonment.

c) Compels every leper to isolate himself.

d) Determines that medical authorities may enter any living place or property where lepers are suspected to exist and to seclude them.

e) Enjoins arresting wandering lepers.

f) Orders to isolate any lepers who have turned themselves a heavy burden to persons responsible for their maintenance.

g) The persons responsible for their entertainment are obliged to indemnify the Government.

h) An order in writing from the Colonial Secretary has sufficient force to justify arresting and isolating any leper.

i) The Governor may order any leper to be set at liberty or given parole as cured.

j) Forbids the entrance of the colony to alien lepers.

k) Refers to discipline and shows a model of the requirement to be signed by the leper, soliciting admission.

l) To article 18th, of the decree No. 63, were added amendations which establish the following alterations:

1) Authorizes the home seclusion of lepers, under certain restrictions.

2) Determines that the Health Officer of each district is to organize and maintain a record of houses containing lepers.

3) The permission of home seclusion shall become void if the house keeper admits as a guest any person whenever not a relative, or if somebody would cohabit within any room occupied by the leper.

4) No house having sheltered a leper can be let for rent again, without previous written permission of the sanitary authority.

5) No leper segregated at home may go out without a permission of the sanitary administration and shall deposit a caution of 250 dollars as a guarantee that he will not infringe the existing regulation.

6) Orders disinfection of washing and implements belonging to lepers as well as terminal disinfection of their buildings.

m) The articles 18, 19, 20 and 21 (the last) stipulate some administrative rules to be provided for, of a lesser importance.

From the rigorous care afforded in the fight against leprosy in this region, we are entitled to forecast better results than in any of the other British Colonies in Asia.

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