THE LEPERS OF THE PACIFIC ISLANDS: A VISIT TO MOLOKAI, PENRHYN ISLAND.

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DURING the annexation cruise of H.M.S. *Mildura* in the Pacific Ocean, with His Excellency the Earl of Ranfurly on board, one of the islands visited was Penrhyn or Tongareva Island, lat. $9^{\circ} 0' 15''$ S., long. $158^{\circ} 5' 45''$ W. Here I had an opportunity of visiting the leper island of Molokai, a small island which forms part of the Penrhyn Atoll, and is named after the famous leper island in the Sandwich group.

The island itself looked a beautiful place enough, and one could hardly imagine that in such a splendid climate, and with such picturesque surroundings, such a foul disease could exist; nevertheless it was there, and in some of its worst forms. There was little sign of life about the island as we landed, but on making a closer examination the unfortunate people were found sitting or lying in their huts, which were dotted along the side of the lagoon. I was accompanied by a somewhat indifferent interpreter, so that it was sometimes difficult to obtain the information needed. As far as I could make out there were nine lepers on the island, and these came under my observation.

The first five cases showed only too plainly the ravages of the disease, and were examples of nodular leprosy.

The first case seen was that of a male, aged about 19. He had been ill, he stated, about a year. There was no other case of leprosy in his family, and I could get no history of any contact. The disease started with fever and sweating; he afterwards developed weakness and loss of flesh. This was followed at a later date by an exanthem of macular spots; but the only one to be seen at the present time was a vitiliginous patch situated on the external surface of the arm. He had had other spots on his body, but these had all disappeared. The limbs were atrophied. The skin of the face and the lips was thickened, and the lower eyelids were drawn down and everted. The most characteristic feature in this case was the deformity of the hands and feet. Both hands presented the characteristic *main-en-griffe* appearance; this was accompanied by anæsthesia and wasting of the muscles. I also noticed that parts of the fingers were wanting, and that some of the nails had been shed. The right foot was also affected in a similar way, talipes equinovarus being present. (The accompanying photograph shows the deformity in the hands and foot. The native woman with the leper attends to his wants; she was free from leprosy.) When asked of what he complained most, he said "shooting pains in his limbs."

The second case was that of a female, aged about 45 years. I could get very little history, except that she had been on the island for three years. She was fairly well nourished. There was thickening of the folds of skin about the forehead and cheeks; both lower eyelids were drawn down and everted; the conjunctivæ were inflamed, and there was lachrymation, but I did not note any corneal ulceration, although in one eye there seemed to be some fixation.

The third case was in the person of a young girl, aged about 14; she had suffered from the disease for one year and four months. The skin of the eyebrows and forehead was thrown into deep folds and very much thickened, the lips were swollen and ulcerated; the nose was very much broadened and ulcerated, the tip having gone. The ears were thickened and pendulous. The whole face presented the appearance known as leontiasis. The patient was unable to articulate, owing, perhaps, to the existing ulceration, and probably to anæsthesia, so that it was most likely that the sense of smell and taste had also gone. The eyes had been attacked, and the patient was quite blind. Macules in

vitiliginous patches were present on the backs of the hands and legs. The fingers were thickened and ulcerated in places, and the toes were also greatly thickened.

The fourth and fifth cases were not so much advanced as the third; one was a man aged 23, and the other a girl aged about 10. All these last belonged to one family, being a brother and two sisters. They also presented the leontiasis appearance, the lips being much thickened, cheeks thrown into folds, eyelids drawn down, exposing the

A leper's hut, Leper Island, Molokai, Penrhyn Atoll.

conjunctivæ in the young child's case, and causing ulceration of the cornea in one eye; the other eye, however, was not yet affected. Nodules were present on the wrists in both cases. In the man's case the ears were tremendously thickened, the whole length of the ear from the highest point of the helix to the lobule being $4\frac{1}{2}$ inches. On making inquiries as to what symptoms came on first, the man, who was fairly intelligent, said "sleepiness and sweating," then the spots, and afterwards the nodules. He had been on the island for two years and four months. These five cases were all at one end of the village. The other cases I saw were all at the other end, where some half-dozen houses were situated. Here were nine or ten natives, all women. Four of them were said to be lepers, but they had only been on the island a short time. They were all very disinclined to submit to any examination, so that I was only able to make a cursory inspection, and in at least two cases the diagnosis was very uncertain, but the time at my disposal did not enable me to make the minute examination necessary for an absolute diagnosis. The remaining women were in attendance on the lepers.

Leprosy was apparently introduced into Penrhyn Island by a native of Samoa—one Tarpema by name—in 1883; there is also a record of a leper coming from Honolulu—one Oranga—at about the same period. Owing, perhaps, to the partial segregation practised, the disease does not seem to have made very great strides, although the percentage (2) is nearly as large as in the Sandwich Islands. As far as I could ascertain the disease has not increased for some years. The longest period that a leper had been at Molokai was three years, and the shortest one year. There have been about 20 deaths; thus, counting all the cases at Molokai at present, a total of 29 cases have occurred during a period of 17 years. The people were keen to gain information for the prevention of the spread of the disease, and also as to how it may be recognised. Owing to the short time at my disposal it was not possible to make a close examination of all the cases. Of course, the well-marked cases needed no further diagnostic evidence, but there were two or three cases which would need careful investigation and microscopic evidence before an exact diagnosis could be made. At present the method seems to be that if any suspicious skin eruption appears on any inhabitant of Penrhyn Island, he is at once taken off to the Leper Island of Molokai, where if he has not leprosy then he stands a great chance of getting it in the future.

At the wish of His Excellency Lord Ranfurly, Governor of New Zealand, I made the following suggestions as being worthy of consideration:

1. That a Government medical officer be appointed, and that he should visit the island once in three months, or oftener if necessary. He could then see all the "suspects," and decide whether they are or are not suffering from leprosy. He could also report on the general health of the people, and give any directions necessary for the treatment of the sick.

2. Instead of a supposed leper being at once deported to the leper island, he or she should be isolated in some other part as a "suspect," until the medical officer confirm or disprove the diagnosis.

3. That an intelligent native, who is willing to look after the sick on the leper island, should be given instruction such as would enable him to administer drugs and apply dressings to the ulcers and wounds of the lepers.

4. That the following remarks as to the prevention of leprosy be translated into the native language and distributed amongst the inhabitants:

I. Leprosy is caused by a germ, and is contagious through contact either directly or indirectly with a leper; therefore the leper is a source of danger to the community he may live amongst. All lepers should accordingly be isolated most rigorously and kept away from the healthy inhabitants, and when found in villages their clothes should be destroyed, and not left about to spread infection.

II. Lepers should be very cleanly in their persons and houses.

III. They should not be allowed to wander about in public places begging, or to keep shops or handle food intended for others.

IV. A child born of leper parents should be at once removed from them.

V. All intercourse between the healthy inhabitants of Penrhyn Island and Molokai should be restricted as much as possible. No cohabitation should be allowed.

VI. No leper should be allowed to leave the island of Molokai on any pretext whatever.

I am indebted to Mr. Malcolm Ross, correspondent for the *Times*, for the photograph.

NOTES ON HEALTH RESORTS.

BRIDES-LES-BAINS AND SALINS-MOUTIERS, SAVOY, FRANCE. AMONG the numerous health resorts possessed by France, none deserves to be better known than Brides-les-Bains. It is situated at the convenient elevation of 2,000 feet above the sea, among the immense mountains of Savoy, many of which are between 10,000 and 13,000 feet in height. This position renders Brides cooler than the neighbouring station of Aix-les-Bains, and secures for it all the charm of scenery associated with Switzerland.

Brides is commonly styled the French Carlsbad, as about 100,000 gallons of water, similar to that at the more renowned German resort, enter the station daily. The water has the natural temperature of 95° F., and contains much free carbonic acid, rendering it pleasantly palatable.

Within two miles of Brides, and connected with it by an electric tramway, is Salins. Here the waters are similar to those of Nauheim, in Germany. They contain a large quantity of common salt, for which they were exploited from Roman times till the annexation of Savoy to France by Napoleon III rendered the industry unproductive. There is also an abundance of free carbonic acid, with iron and other mineral substances in smaller quantities. The waters are at a

temperature of 96° F., with an output exceeding a million gallons daily.

An excellent bathing establishment exists at each station, and is open from the middle of May till the end of September, under joint management. The hotels at Brides afford accommodation for from 600 to 800 persons; they are overcrowded by French visitors during July and August, and patronised chiefly by English and Americans during the cooler months of May and June.

Brides is visited specially for disorders affecting the abdominal organs, such as the liver, stomach, intestines, and kidneys, involving indigestion, constipation, jaundice, obesity, gout, etc. The waters, drunk in small quantities, awaken appetite, quicken digestion, decrease flatulence and oppression, and produce a tonic effect upon the alimentary system generally. In larger quantities their laxative, cholagogue, and diuretic properties are well marked. The saline waters are used as at Nauheim in the treatment of heart affections, and as Dr. George Buchanan, Professor of Clinical Surgery in Glasgow University wrote in 1889, "Their use is of great value in children of rachitic or scrofulous constitution, in anæmia, chlorosis, and other debilitating conditions in women. In affections of the uterus and appendages they are of much service."

The route to Brides from England is through Paris and Aix-les-Bains to Moutiers, which is the terminus for Brides. From Italy it is necessary to change trains at St. Pierre d'Albigny, which is reached soon after traversing the Mont Cenis tunnel.

PLOMBIÈRES, VOSGES.

Dr. A. Brocchi, who has practised for several years at Plombières-les-Bains, a thermal bath situated in a valley of the Vosges Mountains, desires to call attention to the success which sometimes attends a course of baths in cases of appendicitis. As an instance he relates the following:

A man, aged about 56, arthritic, had suffered for twenty years from habitual constipation, and was nervous, easily excited. For three years he had had attacks resembling those of acute appendicitis, with pain and tenderness definitely localised at McBurney's point, thickening of the region, hyperexcitability, etc. The doctor in attendance having seen the patient at the crisis of his attack, did not hesitate to advise an operation. The surgeon consulted fully shared this opinion. The patient, however, and his immediate circumstances were hostile to any operation. The patient was sent to Plombières. On his arrival the fatigue of the journey brought on a crisis. This attack, which Dr. Brocchi was enabled to observe, presented the regular appearance of every attack of appendicitis. The pains, however, yielded to medical treatment, and four days later, on June 5th, 1898, the patient felt much better, and the bath procured undoubted relief. At the time of his departure the patient thought himself cured. There was no pain, no tenderness on pressure at McBurney's point. The winter passed very well. In February, 1899, there was slight pain but no crisis. In May the pain became more violent, and the patient, who had sung the praises of Plombières, began to doubt the efficacy of the waters. Another season of baths was prescribed, which passed satisfactorily. The pains disappeared, and the patient left Plombières in excellent condition, and since then has not suffered the least pain nor even felt the slightest inconvenience in the region of McBurney's point. The treatment consisted in twenty-one baths taken one every day. The patient lay for from forty to fifty minutes covered to the neck in the water (34° C.). After the bath or for the last ten minutes of each succeeding one the douche Tivoli was used. This is simply a spray of warmer water coming out of a rose about an inch in diameter, which, passing through the water of the bath, is allowed to play against the affected part like a feather. After the bath the patient is required to lie down in bed for half an hour.

Dr. Brocchi thinks it probable that in this case the appendix was in an enlarged and congested condition, such as is often found to be coincident with muco-membranous colitis.

GUIDE BOOKS.

The annual volume¹ issued under the editorship of Dr. G. Morice, of the *Gazette des Eaux*, has become a very useful work, especially in regard to French health resorts. It may be compared to the well-known *Bäder-Almanach* of Germany, though the latter is more elaborate, and is issued only every two or three years. The present edition of the *Annuaire* does not differ much from the preceding. Most of the pages are the same in both editions. Not all the mistakes of the last edition have been corrected. Thus, on page 36, we notice the name of an English physician practising at Aix-les-Bains; then comes the same name differently spelt in

¹ *Annuaire des Eaux Minérales, Stations Climatiques, et Sanatoria de la France et de l'Étranger*. [Annual of Mineral Waters, Climatic Resorts, and Sanatoria of France and Foreign Countries.] 43me année. Paris: Maloine. 1901. (Fcap. 8vo, pp. 509. Fr. 150c.)