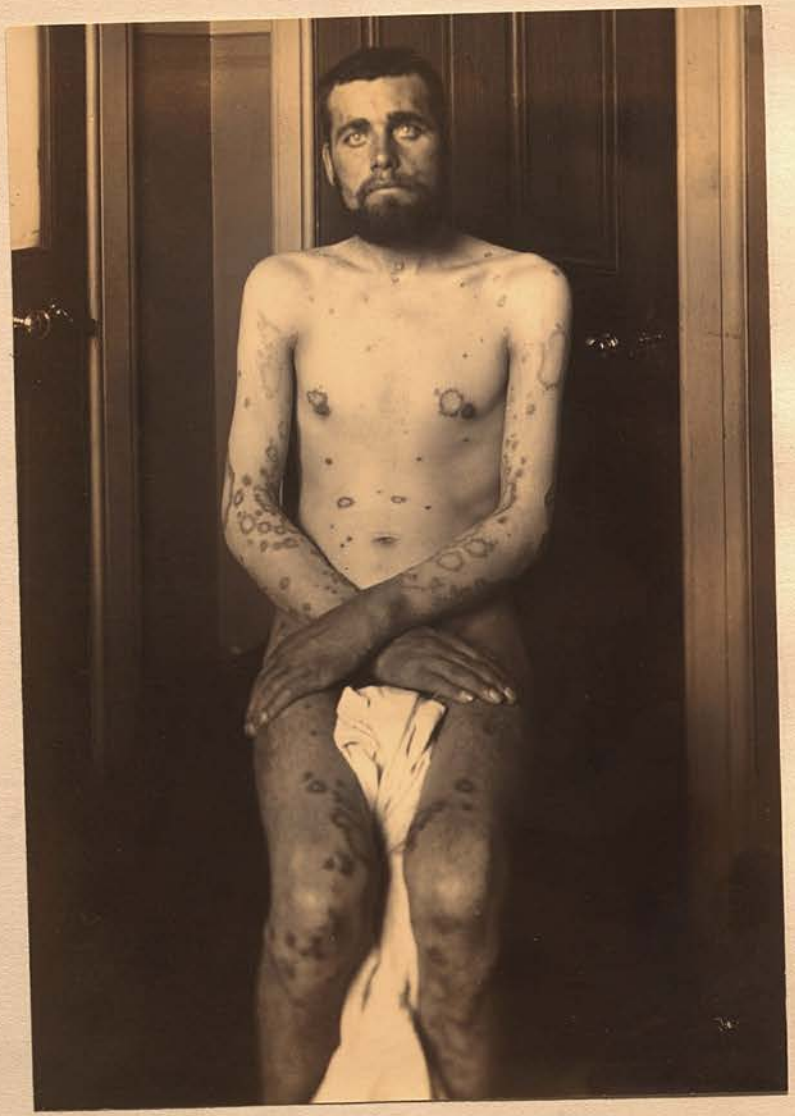
ANAESTHETIC LEPROSY

JAMES ROBERT HALL WALKER, M.B., C.M.
24 Forth Street
Edinburgh.



M..... M.....

Aet, 28.

Labourer, Formerly policeman in Singapore for 4½ years.

Born in Caithness.

Unmarried.

Resides at Lodging House, Parliament Street, Leith.

Admitted 5th August, 1898.

Complaint: "Rash on body and loss of power in left hand."

Duration of Illness: Rash fifteen months; Loss of power four months.

HISTORY:

Hereditary Tendencies: Family history excellent.

Habits as to Food and Drink: Has always had plenty of good food. Until a year ago drank to excess. Smokes one ounce of tobacco weekly.

General Surroundings: Lives in a common lodging-house. Is exposed to all weathers whilst at his work.

Previous Illnesses and Accidents: Had scarlet fever at the age of twenty. Malaria whilst in the Straits/

Straits Settlements. Syphilis which he contracted from a native prostitute in Singapore. He states that he had no sore throat and no loss of hair, therefore probably only soft chancres. No accidents.

Present Illness: In March 1897, three years after having come home from Singapore, he felt peculiar pains all over his body; these he describes "as if needles and pins were being stuck into him." The pains passed off in about a month and towards the end of April 1897 he noticed two red spots "about the size of a shilling" on the inner side of his right thigh just above the knee, these slowly increased in size for six months, at the same time their colour changed from red to brown and their centres faded and became white. A month after the occurrence of these spots (i.e. end of May 1897) other spots began to show themselves, occurring all over his body till April 1898. They also appeared on his face and last of all on his feet. They were nowhere itchy. In February 1898 he began to experience pains in his left forearm and hand, which were of a shooting character. Those the patient attributed to a sprain of his left wrist which he got that month whilst using a heavy mallet to drive paling stobs into the ground; after this his hand swelled and on this account/

account he applied "Embrocation" to it which he states reduced the swelling. Since that date his hand has swelled whenever he attempted to do "heavy work" with it.

STATE ON ADMISSION:

Patient is a strongly built man, and looks more than twenty eight years old. Well developed and muscular, there are no evidences of previous illnesses and accidents. No signs of chancres or buboes. Patient is intelligent but has a somewhat heavy expression.

Temperature 99° F. Pulse 100 per minute, vessel walls not thickened, beat regular in time and force. Respirations 20 per minute.

Integumentary System: The patient is covered with the above mentioned rash, more especially on the upper and lower extremities. It is roughly symmetrical of a brown colour, with dirty white centres. The spots vary in size from a shilling to several inches in circumference. On the face the rash differs from that on the rest of the body, being raised, and of a dull red colour. On the soles of the feet there is a tendency to ulceration There is no itching. The spots, except at their margins, are anaesthetic, pins can be pushed into them/

them without the patient experiencing any pain.

Nervous System: The knee jerks are slightly exaggerated. There is no ankle clonus. There is atrophy of thenar and hypothenar eminences of left hand. The muscles of left fore arm and hand, with the exception of the dorsal interossei and the short flexor of the thumb, all react to faradic stimulation. A small pea-like nodule is to be felt on the left ulnar nerve behind the condyle of the humerus. Dr Sym examined patient's eyes and found them normal.

Urine 1022, acid, pale straw coloured, no abnormal constituents.

Other systems are apparently healthy.

PROVISIONAL DIAGNOSIS: Syphilis?

PROGRESS AND TREATMENT:

6th July, 1898:

℞

Potassi Iodidi	gr.15.
Hydrarg.Perchlor.	gr.½
Inf. Chiratae	oz.½

Sig: T.i.d. post cib. ex. aq.

8th July, 1898: Scraping of scales from skin examined in liquor potassae under microscope, nothing found.

12th July, 1898: Rash not perceptibly improved.

14th/

14th July, 1898: Battery night andmorning for fifteen minutes to left arm and hand.

17th July, 1898: No improvement.

19th July, 1898: No improvement.

21st July, 1898: Dr Allan Jamieson came to the Hospital and saw patient, diagnosis lepra anaesthetica. Medicine and battery stopped. Give

℞ Liquor Arsenici Hydrochlorici M.2½

Sig: T.i.d. ex. aq. post cib.

R.
Ol. Gurgun M. v.

Sig: T.i.d. post cib.

Stained nasal secretion for bacillus leprae; found none.

23rd July, 1898: Patient allowed up.

27th July, 1898: Patient allowed out; was seen by Professor Unna, who recommended caustic potash baths at 30°C.

3rd August, 1898: Patient has been treated for a week with the baths and by local applications of liquor potassae to the spots; the only result is that the spots have assumed a more scale/

scale like character.

8th August, 1898: Patient insists on leaving Hospital for his home in the north of Scotland.

RESULT: Patient left in statu quo.

Such is the history of a case of anaesthetic leprosy which came to the Leith Hospital when I was house physician there and which I am permitted to quote by the kindness of Dr William Elder, the senior visiting physician. The accompanying photograph I took on patient's admission.

Before going into the features of anaesthetic leprosy, I shall give a short description of the history of the disease with special reference to the occurrence of the disease in our own country.

The term leprosy is derived from the Greek Lepros, rough, scaly. There can be no doubt that the disease which we now term leprosy has lasted from time immemorial; but its exact origin is lost in the mists of antiquity. To add to our difficulties in tracing its history, is the fact that many other diseases were formerly included under this name. For example, leucoderma, elephantiasis and syphilis/

syphilis were all undifferentiated from leprosy; indeed, even at the close of the fifteenth century, syphilis was looked upon as an "offshoot of lepra". Herodotus and Hippocrates both refer to leprosy as a disease which was chiefly characterised by scaliness. The earliest mention of leprosy is probably the description of how Moses was attacked by it whilst the Israelites were in Egypt. Leprosy is stated to have existed in Egypt 2,400 years before Christ, in the reign of Husapti the 5th King of Egypt. India and China also suffered from it before Christ and in Japan it is mentioned between 1234 and 1250 B.C. In England, states the same authority, it occurred 60 years B.C. These dates, although possibly inaccurate, serve to emphasise the fact that leprosy has been known for several thousand years and leads us to reflect how little progress has been made in the treatment of it, despite the many brilliant discoveries which have been, and are still being made by our own countrymen and their fellow-workers abroad, in the vast field of the scientific world.

The writers of long ago looked upon Egypt as the source of leprosy. Lucretius, in 95 B.C., writes as follows:-- "There is a disease called elephas, which has its rise on the river Nile, in the/

the middle of Egypt." If one turns to the Old Testament, in the book of Leviticus, one finds elaborate rules for the guidance of the priests in the diagnosis and treatment of leprosy. Unfortunately, however, there can be little doubt that it is not true leprosy that is there mentioned, as the priest is instructed to "shut him up which has the plague for seven days ..... " On the seventh day the priest is again to look at the patient, "and behold if the plague in his sight, be at a stay and the plague spread not in the skin, then the priest shall shut him up seven days more." At the expiry of that time, the patient is again examined, and " "behold if the plague spread not in the skin, the priest shall pronounce him clean ....." and so on.

Now, this only gives a period of fourteen days for spreading and it is notorious that leprosy takes months and years to incubate and goes on spreading indefinitely. At the same time, there is no doubt that the disease existed amongst the Jews when they left Egypt (v. Lucretius). It is stated that the introduction of Leprosy into Europe was due to Pompey's army which had just come from Palestine flushed with the taking of Jerusalem B.C.66 where the soldiers had contracted the disease, possibly in the manner described by John Donne in his elegy on Prince/

Prince Henry

"By thee the silly amorous sucks his death,
By drawing in a leprous harlot's breath! "

The geographical distribution of leprosy does not indicate a preference for any particular temperature. It flourishes as well in the tropical rays of an African sun, as in the dark and dreary regions of the Arctic circle, and a few centuries ago it spread throughout Europe. France suffered so severely that owing to the rapid spread of the epidemic, lepers were ordered to live in a certain portion of the country. These miserable outcasts took for their patron, St. Lazar and built hospitals all over the country, which were dedicated to him. In the beginning of the 13th century, in the reign of Louis VIII., there were 2000 such hospitals in France and these increased so rapidly that soon 19,000 were in existence. In Scotland, so far as I can make out, leprosy existed mostly from the 12th to the 17th centuries. In Great Britain we first hear of leper hospitals being founded in 869 A.D. when one was built at Armagh in Ireland. In 1066 one was built at Westminster for 14 patients and it was kept up by an annual fair. The first in Scotland was founded by David I. at Harehope in Peebles-shire, about 1150. The typical leper house, we learn from Walcott, was composed of "separate cells ranged/

ranged round a quadrangle, and contained a well, a chapel, a common hall, kitchen and dormitory, and a mansion for the sound." In passing, I may mention that the district of Greenside in our own city was the site of a leper hospital. The old Carmelite monastery there was turned into a leper hospital by an Edinburgh merchant named John Robertson. Seven lepers, all natives of Edinburgh, were admitted to it in one day. The regulations were very severe. The patients had to remain inside day and night, and to merely open the gates between sunset and sunrise was punished by hanging. A gallows was erected at one end of the hospital for the purpose of executing those who broke the rules. One of the lepers sat at the door ringing his clapper and asking the passers by for alms. Although the lepers themselves were kept strictly within the hospital, they could have their wives to live with them. All traces of this institution have long since vanished, and at the present day the only record of this once famous monastery is to be found in the title Il Padre Priori di Greenside, which is held by an official of the Roman Catholic Church in Rome. The village of Liberton is supposed to have been at one time a leper hospital, being a corruption of Leper Town. Nothing is to be found, but the ground on which the hospital/

hospital stood is referred to in some old writs as Spitaltown. Most of these hospitals served as inns for travellers, and the lepers in those were allowed to come out and in, clad in a "long grey gown with a hood drawn over the face and they carried a wooden clapper to give warning of their approach." They were permitted to beg for alms and in many places fairs were held for their benefit. Attached to some of the hospitals were "proctors" who went round collecting for the inmates. This ultimately led to grave abuses, as many impostors took to begging on behalf of the lepers and kept the money which they received. In England lepers were permitted to come into the markets; in Scotland, however, this was an offence, which according to Sir J. Y. Simpson was punished as follows:-- "His claithes quherwith he is cled sall be taken frae him and sall be burnt, and he being naked sall be ejected forth of the burgh." This shows that in those early days Scotland was distinctly ahead of her sister country, at anyrate so far as attempting to enforce the isolation law, though in a very barbarous fashion. During the 15th century a law was in force which ran as follows: "Tainted aalmon or pork to be sent to the leper house," but if there happened to be no leper house in the neighbourhood, the tainted/

tainted food was to be destroyed. This appears to be an early attempt at establishing a public health law. Further,"if any wild beast was found dead or wounded in the forests, its flesh was to be sent to the nearest leper house." This shows us that though attempts were made to a certain extent, but very laxly, to keep the lepers from coming in contact with the healthy population, how little the lives of the lepers were thought of, and no attempts were made to ameliorate their condition, far less cure it. In fact, these lepers were legally regarded as dead and could not dispose of any property and the disease was a sufficient ground for divorce. In some places they could listen to divine service through special windows in the church, but they were not allowed to enter the building. In the same manner they were allowed to partake of the Communion Sacrament, but whether special vessels were reserved for their use is not known. Probably the great spread of leprosy during these centuries was to some extent due to the almost universal custom of laying in a store of salt provisions, at all events during the winter months, and to the entire absence of vegetables as an article of diet. Leprosy is no respector of persons and attacks those in high places as well as the very poor; as examples of the former, we have Moses. Miriam, Naaman/

Naaman the Syrian, Bladud, son of King Hudibras; more recently King Robert the Bruce who died of leprosy in 1329. He founded the leper hospital at Kingcase near Ayr. It is related that the famous English watering place, Bath, first came into notice through Bladud, son of Hudibras, King of Britain, who whilst a youth contracted leprosy and was banished by his father, as the courtiers feared they would catch the disease. The young prince sought employment and at last was taken by a swineherd as his assistant. The Church goes on to relate that the pigs became infected with the leprosy and that they "impelled by a sudden phrenzy" ran to the hot springs at Bath, rolled in them and were cured. The prince, observing this, did likewise, became cured, returned home and ultimately succeeded his father on the throne. Quaint were many of the prescriptions for leprosy. I quote one: "Pound together various vegetable roots with salted butter, heat to the boiling point, then strain through fine linen, and add flower of brimstone." Attempting to cure leprosy was not unattended with danger, as so recently as the seventeenth century, Pitcairn relates that a woman was tried for witchcraft at Edinburgh because "she affirmit she could hail leprosie, quhilk the maist expert men in medicine are not/

not able to do." The wide spread of leprosy in Scotland is still kept before us by the names of people and places. For example, M'Clure derived from Mac lobhair (lour) means the leper's son. Although "lour" in gaelic literally means leper, it gradually got to be laxly used and was "applied to any infirm or chronically diseased person." Barlure = the hill of the lepers, near New Luce; Ochtraluce = the upland of the lepers, near Stranraer. Liberland in Ayrshire "denotes a place devoted of old to the isolation of sufferers" from leprosy. In England we find the name Aikman, derived from Ace manne (Angle-Saxon) an infirm person and originally a leper.

We also find Bath called Acemanne's burgh, which has the same meaning as Liberton.

Turning from these very interesting facts to our present knowledge of the disease, I give the definition of leprosy given by Abraham in Allbutt's System of Medicine. "A bacillary disease, apparently peculiar to man, of slow incubation and chronic course, manifesting itself in most cases by cutaneous pigmentary changes, and always by the formation of characteristic neoplasms, particularly in the skin, mucous membranes and nerves, which give rise on the one hand to obvious thickenings and nodosities/

ities; on the other hand to alteration in sensation and to tissue degenerations, ulcerations, and progressive contractions and mutilations of the extremities."

There are three clinical types:--

(a) Nodular, affecting the skin.

(b) Anaesthetic, affecting the nerves.

(c) Mixed, affecting both.

The earliest attempts at differentiating the anaesthetic from the tubercular variety appear to have been made by Constantius Africanus whose followers in the Salernian school mention "insensitiveness of the skin" and "atrophy of muscles". Robinson, towards the beginning of last century, divided the disease into Lepra Tuberculosa and Lepra Anaesthetosa. Many cases of leprosy cannot be definitely stated to belong to either the tubercular or the anaesthetic variety, being a mixture of both. According to Macnamara as many as thirty-five per cent. belong to the mixed variety.

The following is a description of the typical anaesthetic form.

The onset is usually so gradual that it is not noticed by the patient. There is a slight feverishness and a general feeling of being out of sorts. Occasionally/

Occasionally after these vague symptoms bullae appear in the skin; may be only one, never more than a few, and these heal before new ones form. This may continue for years, the disease going no further; generally this is followed by cutaneous anaesthesia. Bullae appear fairly frequently in the tubercular variety also, but as a rule they precede the anaesthetic type. Usually there are shooting pains along some of the nerves with possibly a slight degree of hyperaesthesia of the cutaneous parts supplied by them. The hyperaesthesia may be very severe and the patient may be unable to use his knife and fork without great pain, and consequently requires to be fed. In the long run the hyperaesthesia is succeeded by anaesthesia and usually it is the previously hyperaesthetic parts which become anaesthetic. Norwegian observers indeed maintain that the latter is always the case. Occasionally these symptoms are absent and the first thing which attracts the patient's attention is a feeling of numbness, more especially of the hands and feet, along with a sense of tingling here and there, with may be some loss of power when using a heavy tool. Sometimes the spots, which are of three kinds, viz. Erythema, Pigmentation, or loss of pigment after excess of pigment, are what occur initially. These spots are level with the surrounding skin surface.

Anidrosis/

Anidrosis may be present over the affected patches. The rash usually appears first on the shoulders, back, loins, buttocks, thighs, knees or elbows. Sometimes on the face, but the latter may be free from it all the time. It may follow the line of some of the spinal nerve trunks. The rash gradually increases and frequently the fourth and fifth fingers may show a tendency to contraction, curiously usually of the left hand. As the disease advances the spots increase in size and their centres acquire a dirty white colour combined with anaesthesia; round their edges there may be a zone of hyperaesthesia. The hairs fall out, the edges of the patches are raised and become reddish brown in colour, and along with these symptoms, there is a tendency to desquamation. These patches are as a rule roughly symmetrical. Small shotty nodules may be felt along the course of the nerves, and most frequently on the ulnar nerve as it passes behind the humeral condyle. When these phenomena have appeared, the patient may remain in this condition for many years, or a rapid advance may occur, the paralysis increases, atrophy of muscle occurs, usually first noticed in the thenar and hypothenar eminences and the interossei. Joints may be attacked, the cartilages destroyed and dislocations occur.

Over/

Over the anaesthetic areas blebs may form which vary in size and contain a yellowish serum. Perforating ulcers may occur on the soles of the feet. In the last stage of all, the fingers and toes may drop off and later hands and feet may be shed; along with these waxy degeneration and constant diarrhoea may occur and this, together with a general lowering of temperature, weak heart action, and sometimes tetanic spasms, finally kills the unfortunate subject. Amongst the affections complicating leprosy may be mentioned elephantiasis arabum, herpes Zoster, measles, favus, syphilis, fibroma molluscum, eczema and scabies. The diseases most apt to be confounded with it are syphilis and lupus. Hansen of Bergen maintains that the anaesthetic form always follows as a later stage of the tubercular form, this statement he bases on the fact that out of 141 cases of tubercular leprosy, all showed anaesthesia except nine, and these only lasted a few years.

M..... M.....'s case shows several interesting features and raises some debatable points. There seems to be reason to believe that his disease was acquired by connection with a native prostitute in Singapore, at least three years previous to the patient's first noticing anything amiss.

Of/

Of course, there is always the possibility that as he was living in an infected district, he may have acquired the disease in some other fashion. Unfortunately the patient is unable to state definitely when he contracted his so-called syphilis; but thinks that it was in 1893. From his description of his symptoms, it does not appear to have been true syphilis. His other previous illnesses have no bearing on the case. He stated definitely that he never was a great fish eater, but pleads guilty to excessive drinking. Whether the amount of alcohol he was in the habit of taking would render him susceptible to the bacillus or not, is a moot point, but one would naturally think that it would render him less able to resist disease in any form, and therefore possibly enable him to fall an easier prey to the lepra bacillus. I may state that when the patient was first admitted to Leith Hospital, I diagnosed syphilis, and as my chief, Dr Elder, did not object the patient was treated for that as described in the case. On account of no progress being made, Dr Allan Jamieson was asked to see the case, and at once pronounced it to be a case of anaesthetic leprosy. The treatment thereafter was Arsenic and Gurgun oil and later caustic potash baths were tried by the advice of Professor Unna. Their only effect was that a week later the rash/

rash was more scaly. Unfortunately the patient insisted on going home, since when I have been unable to get any particulars about him. I stained some of his nasal secretion with fuchsin and methylene blue, but found no bacilli, as was only to be expected, seeing that in the anaesthetic form they are only to be found in the nerves.

The bacillus, discovered by Armauer Hansen in 1873, is according to Flugge, 4 to 6 μ. long and less than 1 μ. broad and is very similsr to the tubercle bacillus, which was discovered a decade later. According to Baumgarten the difference between the bacillus of tubercle and of leprosy can be brought out by the fact that the latter takes up the fuchsin stain more rapidly than the former. So far, attempts to cultivate the bacillus have been futile. Abel of Greifswald states that up till now it has not been possible. Experiments have been made by innoculating pieces of leprous tissue into cats, rabbits, mice, pigs, frogs and eels but nothing was observed beyond a local growth, no general spread of the disease took place and there were none of the typical symptoms of it. Ashmead relats an interesting story of a man who resided in a leprous country and whilst dressing a fish, received a wound on his thumb, swelling of the arm followed and in a few months leprous tubercles appeared. The possible fallacy is self-evident./

evident. In the report of the Leprosy Commission in India (1890 to 1891) it is stated that "leper juice from infected patients was placed in glycerine bouillon and that bacilli were found on the 10th day." From this by the end of a month, pure cultures of the bacilli were obtained. It is known that "Keanu, a Hawaiian murderer condemned to death, preferred to have a portion of a fresh leprous tubercle grafted beneath the skin of his left arm, rather than suffer death by hanging." This was done by Dr Arning on November 5th, 1885. In September, 1887 the patient was examined by the Government physicians at Honolulu and they stated that it was their "decided opinion that the man was a tubercular leper". Six years after Keanu's inoculation he died of leprosy. A possible fallacy is, as was subsequently pointed out, that several of Keanu's relatives also took leprosy and died of it. There can be no doubt however, that the bacillus leprae is the cause of the disease. The Indian Leprosy Commission states that "sufficient time has now passed for it to be possible confidently to affirm that the presence of the bacillus leprae in the new growths of leprosy is absolutely characteristic of the disease. Indeed, this bacillus has a specific relationship in the causation of leprosy. No leper

is free from this organism, and in the bodies of those suffering from ~~those~~ other diseases it never occurs." The bacillus has never been found outside the human body, nor in animals, insects or fishes. Father Damien, the well known Belgian missionary, who, educated in France, devoted his life to ameliorating the miserable condition of the lepers of Molokai, lived in closest contact with them and did not succumb to the disease for 10 or 11 years. I would point out that after M..... M....'s case was correctly diagnosed, the features were very typical. The prolonged incubation period; at least 36 months, the gradual onset, with malaise; the appearance of the rash two months later; the gradual fading of colour in the centre of the spots, and their complete anaesthesia, absence of itching, tendency to desquamation, roughly symmetrical character, presence of nodule on left ulnar nerve and progressive inability to use the left hand and arm, atrophy of thenar and hypothenar eminences, the threatening ulceration of the soles of the feet, the only abnormal symptom was the exaggeration of the knee jerks. As regards treatment, the patient remained so short a time in hospital that the different drugs did not get a fair trial.

Almost no progress seems to have been made in the/

the treatment of leprosy. Arsenic, choulmoogra and gurgun oils appear to be ~~in~~ the ordinary drugs used; but many others too numerous to mention, have all been tried with no success, so that at present we are limited to treating the symptoms as they occur, trying, in short, to alleviate the pain and distress of the patient, with no hope of effecting a cure. Dr Horder of China maintains that there is "no disease more amenable to simple hygienic laws than leprosy." He gives every leper a yearly six-weeks' hospital course, keeping him in bed, feeding him up and medicinally, iron and cod-liver oil. On this plan Dr Horder says he can "keep lepers alive for an indefinite time and alleviate almost all their symptoms". Now that we know for a fact that the disease is due to the bacillus leprae, it seems that our best chance is to get an anti-leprosy serum and so cure the patients. We have anti-diphtheritic, anti-streptococcic and anti-tubercular serums; the latter as prepared by Maragliano by discarding cultures of living bacilli and using only the toxic principles, seems to offer suitable lines to go on. True, Behring does not believe in its efficacy, but all the same many cases of lupus have been improved by its use. The mode by which the bacillus gains entrance to the human body is still very doubtful.

If/

If it did so through the unbroken skin, there is no doubt that leprosy would be spreading largely in many countries at the present moment. For example, in Norway, the lepers are by no means strictly isolated, as any one who has been to Bergen must have seen the lepers walking about; therefore we may say that it is not contagious. If the bacillus gains entrance by a wound in the skin or mucous membrane, why have all attempts at inoculation failed? It is worthy of notice here that a case of inoculation by a wound is reported by Mr Strain, surgeon to the Samaritan Hospital, Sao Paulo, Brazil. The facts are as follows; An Italian widow, aet 54, had in February 1899, her left breast removed for scirrhus , along with the axillary and subpectoral lymph glands. The sternal end of the wound suppurated and in a month the patient was discharged with a "small, superficial, granulating surface, uncicatrised." Subsequently the wound was dressed twice at the hospital. In July 1899 the patient returned and a "warty looking patch was found near the inner end; and on the upper side of the cicatrix a few, hard, ill-defined nodules were felt along the inner half of the cicatrix." The patient called again in a fortnight, complaining of "erysipelas of the face." On examination, her face, arms and legs were found covered/

covered with "red elevated, shiny swellings, more or less symmetrically arranged and giving the patient a sensation of extreme heat and burning." The shape of these patches varied, some were "large rings, the enclosed skin having a bleached and dry look." The areas were partially or totally anaesthetic. Examination of the wound cicatrix showed round the part which had healed by granulation", an extensive area of skin with the same deep red line; the skin looked very coarse and had a brawny feel. It was from this spot that the so-called erysipelas had spread to the face and limbs. The patient's son, who lived with her, was found to be suffering from well-marked mixed leprosy. Dr Lutz saw the patients also, and confirms the diagnosis. To my mind, however, the above does not offer conclusive evidence, as the patient has been living in an infected country, as well as in close contact with a bad case of leprosy. The disease may not have declared itself previous to the operation, or if previously free from it, then it may have arisen independently of the operation. There is no evidence to show that a child has been born suffering from congenital leprosy in the same way as congenital syphilis, so it seems not to be hereditary, although there have been numerous cases in which the disease has/

has been handed down from father to son. If the infection were carried by the air, the attendants on lepers would certainly fall victims to it. Now, this is very rare.

Lastly, we have to fall back on the time honoured "fish" theory. This may be made to include all kinds of salted foods, and in the 14th and 15th centuries, we know that enormous stores of salted fish and meats were laid in, and that fresh vegetables were absolutely unknown and great overcrowding and filth prevailed. During the same period the condition of the people was absolutely insanitary, so bad that the worst slums of our large cities at the present time are perfect models compared to the abodes of vast masses of the people in those days. The decrease in leprosy seems to have begun with the improved food and introduction of proper sanitation, absence of overcrowding, and general spread of habits of cleanliness. Till in the middle of the eighteenth century we find leprosy all but extinct in Scotland, so much so that the Kirk Session of Papastour in the Shetland Isles ordained in 1742, a day of solemn thanksgiving, because a gracious Providence had "put a stop to the spreading of that unclean and infectious disease, so that there is no appearance of the symptoms thereby in any person now in this place."/

place." Although these facts may be taken as true on the whole, we have every now and then cases appearing such as M.....M.....'s, who although accustomed to good food and habits of cleanliness, yet are attacked and the interesting feature in this case is that the man seems to have caught the disease either by contagion or inoculation, in the same manner as syphilis is acquired, of course as I before pointed out he may have had the disease, before his connection with the prostitute, or owing to his dissolute habits he may have been pre-disposed to the disease and so taken it, or coming from the far north where leprosy has not been so long extinct he may have had an hereditary predisposition. In favour of the view that M.....M.....acquired the disease from a prostitute, I give the views of the Chinese on the subject. In China we find that sexual intercourse is considered by the natives to be a certain method of catching the disease. There, if a woman is known to be a leper, no man will have connection with her. Further, a woman who has acquired leprosy believes that if she can seduce a healthy man to have connection with her, that she will rid herself of the disease by infecting him. Moreover, they believe that sexual intercourse is a preventive against/

against acquiring leprosy, for if a leper have a healthy wife, she will endeavour to get a healthy man to have connection with her, in order that she may pass the disease on to him and this she does merely as a safeguard, even although she may to all appearances not have a trace of leprosy herself. In China the natives refer to this as "selling off leprosy."

The Chinese also regard leprosy as hereditary, but they all affirm that it does not affect the third generation. This is difficult to prove or disprove. As regards the "fish" theory, it is equally impossible to come to a conclusion as everyone eats fish, but we are not all lepers. There appears to be evidence that leprosy in situations where the disease is endemic, is contagious and that where the disease exists in a situation where it is not endemic, it is not contagious. As proof of this may be taken Hansen's two cases of Norwegians in Norway who contracted the disease by wearing the cast off underclothing of lepers. The monks of Mount Athos started a leper hospital and with great assiduity tried to catch the disease from their patients by mixing with them in every way, eating their food and wearing their filthy clothing. Yet none of the monks caught the disease. Now in Norway the disease is endemic whilst it is not so at Mouth Athos, where the patients all/

all come from their village homes in the Peloponnesus having been expelled thence and forced to take refuge in the woods. The prognosis in leprosy is unfavourable but considerably less so in the anaesthetic than in the tubercular variety. Dr Impey, the Medical Superintendent of the Robben Island Leper and Lunatic Asylums, maintains emphatically that although apparently incurable by medical means, that many cases of lepra anaesthetica are cured spontaneously, either by the occurrence of some bacillary disease, such as erysipelas or smallpox, and the bacilli of these short and severe fevers seem to kill off the bacilli of leprosy, either by sheer antagonism or by using up what is necessary for their existence. He also states that many cases of so-called leprosy are really cured, as much so as in phthisis where a cavity has consolidated and though we know that the lung is not normal, yet we see that the abnormality is due to nature's cure. In the same way, the fever of anaesthetic leprosy may after a longer or shorter time burn itself out and although we see evidences of old leprosy, such as lost fingers, or anaesthesia, yet there is no doubt that the disease has ceased to exist. As proof of this, Dr Impey has examined carefully for the bacillus in such cases and been unable to find it. Now the Indian Leprosy Commission states/

states definitely that "no leper is free from the bacillus of leprosy" therefore these cases must be looked upon as being cured by Nature.

----------ooOoo----------

P.T.O.

REFERENCES.

1. Newman, Leprosy, Prize Essay, New Sydenham Society, London 1895.

2. Ehlers, Leprosy, Prize Essay, New Sydenham Society, London 1895.

3. Impey, Leprosy, Prize Essay, New Sydenham Society, London 1895.

4. Cantlie, Leprosy, Prize Essay, New Sydenham Society, London 1897.

5. Hebra, Diseases of the Skin, Vol. IV., New Sydenham Society, London.

6. Hirsch, Handbook of Geographical & Historical Pathology, New Sydenham Society, London 1885.

7. Flugge, Micro-Organisms, New Sydenham Society, London 1890.

8. Charcot, Lectures on the Diseases of the Nervous System, New Sydenham Society, London 1887.

9. Allbutt, System of Medicine, Vol. II., London 1897.

10. Abel, Taschenbuch fur den Bakteriologischen Praktikanten enthalend die wichtigsten technischen detail-vorschriften zur bakteriol-ogischen Laboratoriumsarbeit, Wurzburg, 1898.

11. Davidson, Hygiene & Diseases of Warm Climates, Edinburgh and London 1893.

12 Morris, Diseases of the Skin, Edinburgh 1895.

13. Osler, Principles & Practice of Medicine, Edinburgh and London, 1895.

14. Maxwell, Sir Herbert, History of Dumfries and Galloway, Edinburgh 1896.

REFERENCES.

15. Grant, James, Old and New Edinburgh, Vol. II., and Vol. III., London, Paris and New York.

16. Clifford, E.C., Memoir of Father Damien.

17. Leviticus, Ch. XII., XIII., XIV.

18. Numbers, Ch. XII.

19. II. Kings, Ch. V.

20. Chronicles, Ch. XXVI.

21. British Medical Journal, 1897 and 1901.

22. Deut. Med. Woch, 1897.