

operate with his physician and follow his advice.

Hypertension is a malady that in its development affects the blood flow generally, and consequently the function of all the internal organs more or less. A pressure of 130 mm. or over on the diastolic side is one that neither heart or artery is able to tolerate for any length of time. Extravagant heights of systolic pressure are often borne tolerantly. The determining factor in prognosis is not necessarily the blood pressure record but the patient's tissue resistance, the ability of his heart and cerebral arteries to stand the strain. This all important factor is unfortunately not as determinable as is the blood pressure in mathematical terms. Clinical manifestations of functional decline announce to the attentive observer what may be expected, and the physician's usefulness is proportional to his ability to appreciate and interpret such indications. Every patient with persistent hypertension is a potential cardiopath.

Since the hypertension heart fails from fatigue, an effort should be made to postpone its development, and the physician should be keenly on the alert for evidence of progressive muscular deficiency. The patient may complain of a decline in the efficiency of his perceptive faculties, and lacks the normal healthy feeling of refreshment after the night's rest. More definite are the increase of dyspnoea and fatigue after moderate effort, the increase in the rapidity of the heart's action, and frequency of premature contractions. Other things being equal a change from the slow measured heart beat of high blood pressure to one persistently more rapid must be regarded as signifying the advent of myocardial insufficiency. Progressive elevation of the diastolic pressure must be watched with concern. The presence of gallop rhythm with oedema and nocturnal asthma need no emphasis. Cerebral developments are less easy to foretell. The urine should be analyzed at regular intervals and blood nitrogen examination made at least twice a year.

While it may be advisable to have the blood pressure taken periodically, it is certainly true that the less a high blood pressure patient thinks about the height of his blood pressure and the more he thinks of living rationally the better he will get along.

A VISIT TO THE LEPER ASYLUM, HEDALA, CEYLON

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So few people now-a-days, with the exception of those who have lived in the tropics, have ever seen a case of leprosy, far less visited a

leper hospital, that some account of my visit to the great asylum in Ceylon may prove interesting. By an exceedingly wise procedure, every case of leprosy diagnosed in Ceylon is removed to the asylum, so that through segregation the disease is kept within controllable limits.

The leper hospital, like all the other excellent institutions in this admirably administered island, is a government institution. The head of it is Dr. Pestonjle, a Parsee gentleman, who though he has been in charge here for twenty years is as keen on his work and as anxious to find a cure for leprosy as though he had just been appointed.

A friend of mine in the Public Works Department of Ceylon drove me out in his car through scenery very typical of the low-lying ground around Colombo. It was delightfully warm, for the mean annual temperature of Colombo is 82° F. The beautiful island looked very green with its huge cocoanut-palms and its rubber trees and gorgeous scarlet flowering shrubs, and with the swamps still pretty full of water from the recent rains, for June is in the "monsoon" season. The road, here and there blocked with bullock-carts, passed through villages where fowls, goats, and cattle live in the self same dust with the more human inhabitants. The chief industry in these collections of huts is stripping the fibre off the cocoanuts and crushing the oil out of the white substance inside.

On arrival at the main entrance of the asylum at Hedala, where a guard is posted, and where one may see the Royal Arms of Great Britain, we were received with true oriental courtesy by Dr. Pestonjle who, accompanied by an attendant, at once began the tour of the place. The grounds, which are surrounded by a high wall, cover many acres and include a Roman Catholic, an Anglican and a Presbyterian chapel.

The wards, as is usual in hospitals in the east, are in bungalow fashion, single storied buildings some of them, with roofs composed only of leaves and poles of bamboo. Some of these "wards" have indeed no sides or walls, the beds being literally in the open air. Each ward is a long rectangular building completely isolated from every other so that the open air cure is perforce part of the cure of leprosy in Ceylon.

Here and there we came upon nicely kept grass lawns, and in other places miniature gardens laid out by the patients to relieve the tedium of doing nothing.

We first visited a ward for women where we found the disease in every stage except the final.

Only an expert probably could diagnose leprosy in its earliest phase, where there is but a slight thickening of the cheeks and of the sides of the nose. It is a malady of essentially slow development, the infiltration of the skin proceeding gradually but steadily until the cheeks

and forehead are swollen and tuberculated, the nose enlarged, coarse, fissured and dog-like, the ears, and often the lips too, considerably thickened. The general appearance is highly unpleasant and infra-human, the description *facies leonina* being, if anything, too flattering.

While the primary infiltration of the skin is taking place, besides recurring attacks of fever there is hyperæsthesia, and an increase of the sweat; but a little later these regions of the skin become anæsthetic, the sweat is suppressed, and the hairs fall out. This last adds to the repulsive aspect of the sufferer.

The type in which nodules predominate is known as *Lepra tuberosa*.

In course of time the nodules ulcerate and some absorption takes place, so that the cartilages and the alæ of the nose disappear, a condition contributing still more to the revolting aspect of the unfortunate patient.

The specific cause of leprosy is known to be a bacillus (*B. lepræ*) discovered by Hansen in 1871.

The rate of infiltration is slow, so that the disease is characteristically chronic. A late site of the infiltration is the eye in which the cornea becomes opaque and the choroid, iris, and retina are destroyed, leading to all degrees of blindness. The sightless eyes still further increase the pathetic appearance of the leper.

There were 550 patients, men, women, and children, when I visited the asylum last June. They are carefully nursed by a devoted band of French-speaking Roman Catholic sisters and by Cingalese attendants.

The second type of leprosy is that in which the peripheral nerves are chiefly involved. There is therefore at first hyperæsthesia and neuralgia, followed by anæsthesia and atrophic changes in the skin and muscles, which latter become parietic.

This type is known as *Lepra maculo-anæsthetica*. The skin wastes and becomes very thin and glossy. Owing to paralysis of the facial muscles, the expression is lost (mask-like face) and the eyes cannot be closed.

The condition of the hand is very characteristic. Since the ulnar and the median are the nerves most usually affected, there is paralysis and wasting of the flexor muscles which leave the unopposed extensors to produce the familiar retraction of the hand. The paralyzed muscles including the interossei atrophy, so that a highly characteristic claw-like appearance is developed (*main-en-griffe*).

The atrophy of the fingers and toes leads to their absorption, even the bone disappearing or, as it is popularly called "falling off". Later the wrists and ankles are absorbed, leaving only shapeless stumps. Dr. Pestonjle showed me every stage of the disease from that in an

infant-in-arms to that in a totally blind old man with no hands or feet who required constant nursing. One ward is reserved exclusively for these human derelicts in their final stage.

The extremely chronic and not very fatal nature of leprosy is shown by the fact that one man has been a patient here for 47 years, another for 50. Most lepers die from some intercurrent condition such as nephritis, tuberculosis or any low type of degeneration.

The mode of entry of *B. lepræ* is even now not a matter of certainty.

Dr. Pestonjle believes that leprosy is communicable by direct contagion, as from parent to child, for the child shows the initial lesions on the cheeks and buttocks which are exactly the parts to come in contact with the infected skin of the parent as he or she nurses the child.

Dr. Pestonjle is still searching for a cure, and he agrees that chaulmoogra oil, obtained from the seeds of a plant, *Gynocardia odorata*, is the only substance that can be called a remedy. This oil, about which so much has been written, will effect a cure in children if the disease be not of more than a few months' duration. The oil may be injected or rubbed into the skin, or given by the mouth, in doses beginning with ten drops three times a day, increasing to a maximum of two drachms. I was shown four children of about six years of age who had had injections of this oil for some months and were about to be discharged cured. In any other stage leprosy is incurable. A glycerine-diluted, filtered culture of the bacilli has been used as an injection, but not with encouraging results.

With regard to incidence, leprosy is commoner in the male sex, in whom it usually appears between fifteen and thirty years of age.

It has long ceased to be an endemic disease in Europe; the last case reported was one in the Shetland Islands in the year 1798. It had disappeared from England before the time of King Henry VIII. By the middle of the seventeenth century, leprosy had so declined in France that Louis XIV abolished the lazaret-houses and devoted their revenues to the building of hospitals and to other charitable purposes. It is now confined to the tropics and sub-tropics of Asia, Africa, America, and the West Indies. It is still most severe in central Africa in a belt from Nigeria to Abyssinia, a region which in all probability was the original home of the scourge.

It is not easy for us to understand how leprosy has been so extremely dreaded in all lands and in all ages, seeing that leprosy as we know it to-day is not nearly so malignant as tuberculosis, syphilis, or cancer. But we may be reminded of the horror with which it was once regarded in the Old Country by visiting certain ancient churches which still possess in-

tact "the lepers' window". The lepers' window was a small, slit-like aperture in the wall of the chancel, and therefore behind the altar, through which the priest could hand the sacred elements to the lepers who were not allowed to enter the church.

In some cases another arrangement was made; the lepers sat together in a passage or narrow compartment so constructed with reference to the chancel that they could not be seen by the congregation but from which they could see the priest when he was officiating at the altar. The lepers while invisible to the congregation could yet receive the bread and the wine at the hands of the priest.

In the light of the most recent research, leprosy is to be classed as one of the "dirt" diseases, the infection of which is conveyed to man by the bite of the bed-bug, *Cimex lectularius*. The *B. lepræ* has indeed been found in a mosquito (*Culex pungens*), but the distribution of leprosy does not correspond with that of any known species of mosquito.

The reasons for incriminating cimex are briefly: The bacillus of leprosy has not only been found in bed-bugs, but it has been recovered from them sixteen days after they have fed on leprosy patients.

Undoubtedly leprosy was banished from Europe through the combined effects of isolating the lepers and of the improved sanitary conditions which diminished the number of the bugs as well as the quantity of their infected food.

No other intermediate host would be compatible with the well known immunity of doctors, nurses, and other attendants in leper asylums.

The Indian Leprosy Commission of 1890 found that leprosy was a disease *sui generis*, and not a manifestation of syphilis or tuberculosis; that it was not hereditary, but both contagious and inoculable. They held that neither food nor climate originated it, but that each of these, amid insanitary surroundings, might predispose to the development of the disease.

In the course of our talk, I had time to ask Dr. Pestonjle whether he considered the leprosy of the Old Testament was the same disease which

we call leprosy to-day. I especially recalled the expression used of Gehazi (II Kings V. v. 27)—"A leper as white as snow." He said he believed that leucoderma and certain parasitic skin diseases as well as the cutaneous manifestations of syphilis and even psoriasis, were all referred to as leprosy in the Bible.

Two long chapters (13 and 14) in the Book of Leviticus are entirely devoted to leprosy and the "law of the leper". In the light of our knowledge about leprosy the following points in the Biblical account are interesting:—

Ulceration followed on progressive inflammation; the hair turned white; segregation was recommended ("he shall dwell alone," Lev: 13, v. 46); leprosy was recognized in clothing which was to be burned, and in a house which was to be destroyed "stone by stone."

There is no doubt at all that if the segregation of lepers and the burning of all infected material had been systematically carried out, the disease would never have attained the proportions which we know it did attain.

We have probably no conception of the horror with which the leper was once regarded. He was provided with a special dress, a cowl, a stick and a pair of clappers, and was interdicted absolutely from appearing anywhere save in that garb. He was to cover the upper lip and cry, "Unclean, unclean!" he was never to walk on narrow paths, never to speak to anyone save when asked a question and then only in a whisper, lest his breath should spread the pestilence.

Medical science has rid us of many terrors, but of none perhaps more thoroughly than that of leprosy.

No account of leprosy would be complete without some reference to the marvellous life of self-sacrifice and heroism lived by Father Joseph Damien amongst the lepers on the Hawaiian island of Molokai. Here from 1873 to 1889 did this Christ-like man care single-handed for 700 lepers acting as physician, teacher, magistrate, priest, and grave-digger.

He finally himself succumbed to the disease.

Father Damien's practical Christianity was the theme of a fine essay by Robert Louis Stevenson.

Physicians' Evidence Against Their Brethren.—In a discussion at the Hunterian Society on the legal perils of the physician, a well known surgeon and the president of the Medical Defence Union, Sir Herbert Waterhouse, said he had been struck by the fact that one of the greatest legal perils of the physician was the treatment meted out to him in the witness box by members of his own profession. No matter

how weak the case against a physician, he had never known lawyers on the other side to fail to find some physician to give evidence against his professional brother, and frequently those witnesses were leading members of the profession. And there was a tendency for certain well known names to appear in that capacity. This he considered to be a state of affairs discreditable to the profession.