

Medical science is of high standard in Finland. They had skilful surgeons and medical men from the early days. By the law, the State is responsible for the training of nurses in Finland, the schools being under a State Inspectress who lays down the minimum requirements.

In Abo or Turku I visited a large modern hospital and Preliminary Training School, and also the medieval castle, where a brilliant court once held sway; and the cathedral, which is over seven hundred years old. I now learn that the town has been heavily bombed and burnt down.

About twelve miles from Abo, stands a Sanatorium of modern architecture, with 286 beds, and built two years ago. The Sanatorium is surrounded by pine trees, and the floors and the staircase are a bright yellow colour to give the psychological effect of sunlight. Psychology plays an important part in treatment of patients. I noticed this particularly in a Mental Hospital I visited in a place called Kellokoski, which is a few miles away from Helsinki.

On my way to Kellokoski I was pointed out the house of Jean Sibelius, the great Finnish composer.

I end with a translation from the Finnish National Song, "Oi Maamme Suomi Synnyinmaa."

"Our land, our land, our Fatherland !
Thy glorious word ring forth !
No mountain rises proud and grand,
Nor slopes a vale, nor sweeps a strand,
More dear than thou, Land of the North,
Our father's native earth."

LECTURE NOTES ON LEPROSY: SIMPLE DIAGNOSIS AND TREATMENT.

*By Dr. JOHN S. NARAYAN, Medical Officer, Leprosy Hospital,
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One can easily diagnose a case of advanced leprosy like the poor crippled beggars in the streets with mutilated and absorbed fingers and toes—what we call Burnt-outs. They are, of course, most of them non-infective, but very often we neglect to notice our own household servants, the barbers in the saloons, the dhobies, and the patients travelling in trains, who are really suffering from leprosy and who are a source of infection to others. The difficulty lies mainly in diagnosing an early case of leprosy.

Ignorance, shame and fear are the chief causes why leprosy is not diagnosed and treated in its earlier stages: ignorance to notice the early appearance of the lesions is not only of the patient himself, but also of the qualified medical practitioner;

shame lest others know of the dreadful and loathsome disease; and fear of loss of appointment and social status. Here one should think that leprosy is not so infective and so dangerous as tuberculosis, but for the loss of digits and crippled appearance, due to the actual negligence of the patient. There is every possibility of the disease being arrested, if the case is diagnosed earlier and treated, at the same time maintaining the general resistance of the patient.

In the Middle Ages in Europe, the people were able to diagnose the disease earlier and immediate steps were taken to stamp out the disease, and now one very rarely finds a case in the whole of Europe.

The two most important cardinal signs for diagnosing a case of leprosy are anaesthesia and the finding of bacilli. There are also other secondary signs, though they are not for a clear diagnosis, but lead to a strong suspicion in the absence of the two cardinal signs—such as depigmentation, loss of sense to heat or cold, deep analgesia, hyperaesthesia, erythematous patches, thickening of nerves, parakeratosis, anhydrosis, interfollicular swelling, dry rhinites and scab formation in the nose, trophic blisters and ulcers, and contraction and absorption of fingers and toes.

1. **ANAESTHESIA.** This is an early neural sign of leprosy and commonly noticed in the extremities and in the neural pigmented patches.

Blindfold the patient and touch the various lesions on his body with a cotton-wool swab. Then ask the patient whether he can feel the touch of the swab. If he fails to know, it clearly gives the idea about the loss of sensation at that particular area and thus anaesthesia is elicited.

2. **FINDING OF BACILLI.** Bacilli can commonly be seen in the skin and mucous membrane and also from the lymphatic glands, nerves, blood and other internal organs, etc. The commonest sites selected for taking specimens for examination of bacilli are the mucous membrane of the nose, the ear lobe, and the suspected leprotic lesions.

(1) *Nasal Scraping.* With a sharp pointed scalpel, the mucous membrane of the nose at the antero-inferior angle of the inferior turbinate bone, is scraped and the material smeared on the slide.

(2) *Skin Examination.* (a) *Clip-method.* The ear lobe is the commonest site for obtaining the material by clipping. It can be done in any suspicious lesion also. The lobe of the ear or a fold of the skin of a suspected lesion is picked up with rat-toothed forceps and with a pair of flat-curved sharp scissors, a fragment of the ear-lobe, or the skin lesion, 2 mm. thick, or thick enough to include dermis, is snipped off. Then the material from the corium is scraped and spread on the slide.

(b) *Slit-method.* A clean cut is made with a sharp scalpel well into the dermis of a suspected lesion of skin, holding the skin between the two fingers to prevent bleeding; any bleeding or oozing out is wiped off. Then the deeper layer of the slit is scraped and the cellular material spread on the slide.

Staining Methods. The smears are spread on the slide and fixed over a flame and then stained with carbol-fuchsin, at least for 20 minutes at room temperature, or heated three minutes till it steams. The slide is then washed with distilled water and decolourised with 10% solution of sulphuric acid. The slide is again washed with distilled water and counter-stained with concentrated solution of methylene blue for half to one minute, then washed and dried and examined under an oil-immersion lens. The bacilli will be seen in clumps or in singles.

One should remember that it is very uncommon to notice bacilli in a nasal smear when the skin smear is negative for bacilli. Very rarely one may find one or two cases with positive nose and negative skin for bacilli.

Coming next to THE TREATMENT OF LEPROSY, it is quite necessary to mention that there is no specific for leprosy, *i.e.*, there is no specific drug in the sense in which antimony is for kala-azar and quinine for malaria. It may also be clearly stated, however, that there is a line of treatment which will cause the permanent disappearance of all active signs of this disease in early cases, so that the patient is for all practical purposes cured, or the disease arrested, but there is a possibility of a relapse if the general resistance is not maintained later. Both tuberculosis and leprosy can be diagnosed and treated earlier, but the prognosis is much more favourable in leprosy than in tuberculosis. It is very difficult for one to mention any specific drug in leprosy, unless definite facts concerning its transmission, infectivity and the culture of the bacilli are known.

The treatment of leprosy can conveniently be divided into (a) General, (b) Special, (c) Routine, (d) Treatment of complications, (e) Local treatment, and (f) Length of treatment, and its results.

(a) *General Treatment.* As in tuberculosis and other debilitating diseases, general measures in keeping up the resistance and health of the body, should be observed; *e.g.*, cleanliness, fresh air, exercise, diet adequate in food values, climate, constipation, mental worry; and care should also be taken to treat coincident diseases like malaria, hookworm, dysentery, syphilis, gonorrhoea and other inter-current diseases which lower the resistance of the body. The patient should reside in a temperate climate and live in a well-ventilated dwelling to ensure fresh air. The surroundings of patients should be kept clean, and daily cleaning of the body by baths, and wearing of clean clothes, are essential. In institutions separate wells and tanks should be provided for washing and bathing purposes. Exercise is one of the most important factors in the treatment of leprosy. Every patient should have at least three hours daily exercise, which may take the form of walking, playing outdoor games, gardening, etc. The diet should be carefully regulated; food must be fresh; tinned and preserved food should be avoided; fresh vegetables, milk, butter, eggs and other food substances containing vitamins A and D are very valuable. Stimulants like alcohol and tea should be avoided. Rest after

food is good. Starvation causes lowered resistance of the body, due to lack of nourishment, and excessive eating is also harmful. Moderate diet should be given always.

Here I should like to mention that in places like Korea, where people commonly eat fish, leprosy is more prevalent, due to taking putrefied fish. Even though this may not cause direct infection of leprosy, it will lower the resistance of the body and thus enable a person to get infection by contact, very quickly. It is also more common in some places in India where people take putrified foodstuffs and those not containing vitamins A and D. Constipation is a common complaint among leprosy patients. It should always be attended to, either by regulating the diet and eating more fruits and vegetables, or by administering drugs like senna, liquid paraffin, magnesium sulphate, cascara sagrada liquid, and other laxatives. Mental worry is the commonest factor in these patients. They should always be kept happy and cheerful, else recovery is delayed. Patients in an institution should be provided with recreations like cinemas, games, music and other social activities. By encouraging an interest in social activities, the outlook of the patient is brightened and his interest in life is quickened, and the improved mental state cannot but have an influence in recovery. I have to boast myself of the Dichpalli Institution where such activities are provided.

Coincident diseases should be treated along the usual lines before any treatment for leprosy is given.

(b) *Special Treatment.* Various drugs, vaccines, and sera have been tried in the treatment of leprosy, e.g., heavy metals like antimony, gold (solignol B), mercury, copper, etc., aniline dyes like methylene blue, trephine blue (1% solution), acroflavin, fluorescin (2% solutions), and brilliant green in 1 in 3,000 solution, have been tried. Oils like neem oil, coconut, gingelly, castor, etc., have been tried. Neem oil, which has been tried here recently, proved successful in six out of 16 cases tried, and without any relapse so far. Other drugs like potassium iodide, thyroid, succinol, were also tried. Vaccines like typhoid and leprolin were used in the treatment of leprosy. None of the above drugs or vaccines has given such successful results as hydnocarpus oil, which is commonly used in the routine treatment of leprosy.

(c) *Routine Treatment.* Hydnocarpus oil and its preparations.

This oil, otherwise known as chaulmoogra, was first introduced in modern therapy by Dr. Mourat of the Madras Medical Service in 1856. Buddha used it 500 years before Christ. It has been used for centuries by mouth in increasing doses. Dr. Blanc of New Orleans was the first to start giving it by injections. Rogers brought the intra-venous route.

Of the three varieties of hydnocarpus, the commonest and least toxic one is Hydnocarpus wightiana, which grows in abundance in South Malabar. Teraktogenos kurzii is commonly grown in Burma, and Hydnocarpus anthelmintica in Siam. The oil should be obtained by cold expression from fresh ripe seeds.

HORLICKS IN TUBERCULOSIS

AT all stages Horlicks is beneficially included in the diet of the tuberculous patient.

Horlicks is pure, fresh milk modified with the nutritive extracts of wheat and malted barley. It is partially pre-digested and contains no starch, cane or beet sugar. It provides liberal protein, much of it in a directly assimilable form and its carbohydrate moiety is a mixture of lactose, maltose and dextrin.

Tests show that Horlicks stimulates blood regeneration in nutritional anaemia. This characteristic is derived not solely from the haematopoietic qualities of its mineral content, but from its general nutritive qualities.

Horlicks helps to make the invalid's diet more appetising and palatable — it is an excellent vehicle for extra dietary such as cream, beaten eggs, etc.



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The oil of *Hydnocarpus wightiana* can be got from Messrs. Ernakulam Trading Co., South Malabar, in 1 to 5 gallon tins at the rate of about eight annas a lb. The crude oil should be heated for about 45 minutes and sterilized, and about 4% of creosote added, and kept in a cool place. The oil should again be heated in steam at least for 45 minutes before use, since it solidifies very quickly, especially in cold weather.

Following are the preparations of *hydnocarpus* oil:

1. *Hydnocarpus wightiana* oil with 4% creosote.
2. Ethyl esters of *hydnocarpus* oil with 4% creosote.
3. Ethyl esters of *hydnocarpus* oil with 0.5% iodine.
4. Sodium *hydnocarpate* or Alepol in 3%, 4% and 5% solutions mixed with $\frac{1}{2}$ c.c. carbolic acid.
5. Mixture E.C.C.O. (Esters $\frac{1}{2}$ c.c., Camphor 1 grain, Creosote 1 c.c., Olive oil $2\frac{1}{2}$ c.c.)

These drugs can be administered orally, intramuscularly, intradermally and by subcutaneous infiltration. Alepol can be administered intravenously. Of all these preparations, *hydnocarpus* oil is a much more efficacious, less toxic, less costly and less reaction-producing drug.

Start the dose from 1 c.c. in cutaneous cases and 2 c.c. in neural cases, up to 12 c.c., increasing the dose weekly by half to one c.c. Injections are given bi-weekly. Intradermal injections are given into the patches, whereby the bacilli entangle themselves in the oil and gradually die out. Even though the oil has no specific action on the bacilli, but it is supposed to act as a tonic for the tissues. Never give intradermal injections to the same patch within a period of 15 to 30 days, else there is danger of non-absorption of the oil and formation of keloids. For subcutaneous infiltration, the injections are given into the outer aspects of the extremities, by inserting the hypodermic needle through the skin with its surface, and without withdrawing it through the skin, injecting small quantities of the drug into the subcutaneous tissue, at points on the circumference of a circle of which the skin punctured forms the centre. About $\frac{1}{2}$ to 1 c.c. of oil, according to the power of absorption of the tissue, may be injected at each point. In all these cases care should be taken in sterilizing the syringe and the needle.

Administration of *hydnocarpus* oil sometimes causes nausea, vomiting, giddiness and dimness of vision, loss of weight, and sometimes damage to the renal epithelium. In such cases oral administration of the drug is not much more favourable, as it will have a direct action on the gastro-intestinal tract. *Hydnocarpus* oil should not be administered to patients suffering from tuberculosis, nephritis, dimness of vision, eye-reaction, and other debilitating diseases. It was recently suggested that the dosage of the oil can be increased as much as the patient can resist and absorb.

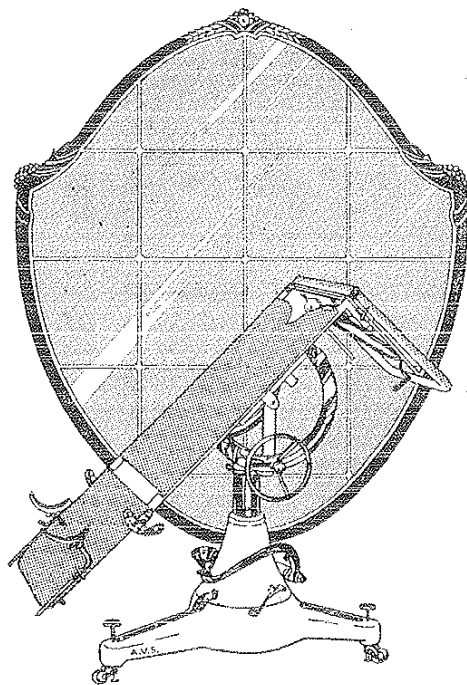
(d) *Treatment of Complications.* Complications in leprosy are very common and their treatment requires skill and care. Among the complications, lepra-reaction is the important one. This may arise from any debilitating condition which in any way lowers

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the resistance of the patient. The reaction may occur in any stage of the disease and is very common in the cutaneous type. It is usually temporary, subsiding within a few days or weeks, but sometimes neural lesions are permanent. Short reactions do good but prolonged reactions are never beneficial. Lepra-reaction is a toxæmia associated with the dissemination of mycobacterium leprae throughout the body. This may be caused by multiplication of the bacilli, or by the liberation of bacilli from the tissues where they have been previously shut up, or both processes may occur.

It is difficult to explain the toxæmia, as lepra-bacilli produce no toxins. It is probable that the reaction is an allergic phenomenon and this may explain the toxins.

Rise of sedimentation index, rise of temperature to 104 or 105 degrees, followed sometimes by rigor, pain, tenderness, swelling, abscess formation, rapid extension of anaesthesia and development of trophic lesions, joint pains which sometimes have to be differentiated from gonorrhoeal arthritis, bone pains, cutaneous lesions consisting of erythematous painful nodules varying in size, thickening of existing lesions, oedema of feet, hands, face and lips, mucous membrane lesions causing purulent discharge, epistaxis, blocking of nares, swelling of the larynx causing severe respiratory obstructions, ulceration of the pharynx, oedema of the glottis, adenitis, orchitis, oophoritis, and reaction of the lung, are the commonest signs of lepra-reaction. Sometimes the eye also is affected and shows signs and symptoms of conjunctivitis, iritis, iridocyclitis, and corneal ulcer. In the reaction of the lung, it closely simulates tuberculosis.

Treatment. When the patient has high fever with reacting nodules, the first thing is to keep him in bed, cover him with blankets, and allow him to perspire. Anti-pyretic drugs like aspirin, phenacetin, or Dover's Powders of 5 grains each, can be administered. The next morning saline purgative like 2oz. of magnesium sulphate solution should be given. Metallic drug preparations, e.g., solignol B, have given beneficial results in certain chronic skin reactions. As a routine, potassium antimony tartrate, .02 to .04 gm. dissolved in 2 c.c. of normal saline or aqua distillata, is given intravenously every alternate day with beneficial results. In neural reaction, ephedrine, $\frac{1}{2}$ grain in one dram of water can be given orally or subcutaneously. So also adrenalin hydrochloride, 1 in 1000 solution, $\frac{1}{2}$ c.c., can be given subcutaneously. Locally, drugs like antiphlogistine, belladonna and ichthyol, may be applied. In severe neuritis, drugs like tincture gelsemium, 5 minims in 1 oz. water, can be given T.D.S. Better results can be obtained by injecting 2 to 4 c.c. of hydnocarpus oil with 4% creosote on alternate days along the course of the nerve intradermally. Sometimes even the thickening of the nerves can also be reduced. In abscess of the nerve, the abscess should be opened, pus drained, necrosed tissue removed, and, where necessary, the nerve decaptulated. Joint pains and bone pains are also treated in the same way.

In complications of the nose, bleeding, crust formation, smell, pain and erythema are the signs usually noticed. In such cases

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the following nose drops should be put into the nostrils every evening:—

Camphor	...	1 oz.
Creosote	...	1 oz.
Hydnocarpus oil	...	1 oz.
Gingelly oil	...	9 oz.

In superficial ulcers where there is bleeding, spray the nose with 5% chromic acid, or cauterise the ulcer with pure carbolic acid and apply liquor adrenalin hydrochloride, 1 in 1000 solution, and irrigate the nose with borax 1 in 8.

Complications of the mouth and throat. Ulcers of the throat, palate, tongue, glossitis and oedema of the glottis, etc., are commonly noticed. For ulcers, spray and paint with 5% chromic acid twice or thrice a week. For pain and oedema of the glottis, subcutaneous injections of 1% solution of atropin sulphate, 1 c.c. dissolved with $\frac{1}{2}$ grain of ephedrine hydrochloride, may give relief.

Complications of the eye. The commonest complications, reactionary or otherwise, are conjunctivitis, iritis, keratitis, iridocyclitis and corneal ulcer. Whatever complications of the eye there may be, it is advisable to keep the eye at rest and the pupil dilated by dropping 1% solution of atropine sulphate into the eye. In certain cases of chronic eye reactions, 1% solution of triphenyl blue given sub-conjunctivally has given beneficial results. In corneal ulcer, keep the pupil dilated three days before cauterizing the ulcer with pure carbolic acid, and anaesthetise the eye with 1% solution of cocaine hydrochloride 15 minutes before cauterization. Then put a few drops of fluorescein 1% solution into the eye to define the ulcer clearly. Take a match stick dipped in pure carbolic acid and touch the ulcer. Wash the eye with normal saline and put mercury perchloride, 1 in 5000 solution, twice a day.

Ulcers. (i) Leprotic ulcers are caused by the breaking down of nodules, and hydnocarpus oil dressings are very beneficial.

(ii) Trophic ulcers are commonly seen in the soles of the feet, hands, toes and fingers. Mercurochrome, 2% solution, or glycerine iodoform dressings will sometimes have effect on the ulcers. Maggot infection of the trophic ulcers is common. Pour a few drops of chloroform in the sinus of the maggots coming in or out and extract them, and dress the ulcer with turpentine or any other strong antiseptic. In all cases of necrosed bone, high amputation of the bone, above the actual site of the infection, is more effective. Injection of hydnocarpus oil into the ulcer is much more beneficial and is a recent advanced treatment.

(e) *Local Treatment.* Counter-irritant drugs, like trichloroacetic in 1 in 1, 1 in 2, 1 in 3, 1 in 4, and 1 in 5 solutions, are applied to the lesions. This will cause temporary depigmentation, followed by hyper-pigmentation; later the excess of pigment will gradually disappear, leaving a more or less normal appearance of the skin. Stronger solutions are applied to the nodules, and weaker to the depigmented patches.

(f) *Length of Treatment.* Treatment must be carried on until repeated careful bacteriological examinations have failed to demonstrate

bacilli over a period of at least six months and till all signs of active nerve lesions have been absent over a similar period. Treatment should be continued for from six months to two years after all active signs have disappeared. Periodical examinations should be carried out at least once in three or six months for two years after the patient has been discharged as "disease arrested", and if found with a relapse he should be again treated.

Conclusion. Finally I should like to say once again that we have as yet no remedy which, in the true sense of the word, may be called a specific; but by carrying out treatment on the lines mentioned above, we can hope for the permanent disappearance of all active signs in almost all patients in whom the disease is diagnosed early, while, in the later stages, although much more prolonged treatment is necessary, very promising results are obtained and many have become entirely well and have remained so for periods of several years.

FOR THE QUIET HOUR

A Day's Happiness

By G. LILY SUNDRI

All the time, as a bud, I was hiding under the green shiny leaves, but when Nature asked me to come out and see the bright and beautiful world, I was so happy. So, one morning, I lifted up my head to the sun as it was shedding its glorious rays on everything around. "What a bright and charming world is this!" were my first words. I was extremely glad and happy. The very word "sorrow" was unknown to me, as I was a poor innocent creature. So I enjoyed the sunshine the whole day. All the other flowers around laughed at my excitement as they greeted me. A group of honey bees constantly visited me. I gave them honey which was in my cup, and in exchange I had a little pollen.

But that day I had to depart from my fellow-flowers. A kind lady came to me. Tears were dropping from her eyes. She came very near to me and her tender hands separated me from the plant which had so carefully looked after me. Then I realized that pain and sorrow existed in the world. I was given to a little sick girl, who was lying in bed. Her hands, which were hot, because of her fever, seemed to burn my whole body. She held me in her hands till she went to sleep. I was completely crushed by her delicate hot hands. But I seemed to have given her some happiness. After some time I was thrown into a waste-paper basket and I too had to say Good-bye to the world.
