

REVIEWS

Leprosy in India, Vol. 25, No. 1 (Jan. 1953).

In a letter Dr. Lowe strongly criticises an article in this journal of April 1952, in which Khanolkar and Rajalakshmi claim originality for the view that infection spreads up the peripheral nerves from the skin, a view held by most leprologists for many years. He points out that dissemination through the nerves is only one of the routes by which bacilli reach the skin, and that especially in lepromatous cases bacilli spread also through the blood vessels and lymphatics. He also criticises the finding of bacilli in and on the skin of healthy contacts, and the interpretation of these findings. There are many possible fallacies connected with the ubiquitousness of acid-fast bacilli, such as their presence in tap water.

" Dr. Khanolkar views all cases of leprosy as infectious and apparently equally infectious. On the latter point his findings are at variance with those of dozens of research workers of international reputation. An isolated report, such as that of Khanolkar, does not carry conviction. It must be confirmed by others."

Dharmendra, S. N. Chatterji and N. Mukherji describe *A Study of the Flat Hypopigmented Patches in Leprosy with special reference to their Classification*. The indeterminate form is the most difficult to classify, that is where there have been white patches from the beginning, which are not residual. The study is based on 128 out of 148 cases in Calcutta, in which there were performed bacteriological examination, the lepromin test and histological examination. In the remaining 20 a histological examination was omitted. If the lepromin test is positive and the bacteriological examination negative, a benign course may be safely forecast, and it is suggested that the case may be classified as " non-lepromatous leprosy " with the sub-title of " macular variety " alongside of tuberculoid type. If the bacteriological examination is positive and the lepromin negative the disease almost always takes a malign course, and " macular variety " may be included under the lepromatous type. Only the remaining cases left after deducting these two varieties should be retained in the indeterminate group.

E. MUIR.

Leprosy in India, Vol. 25, No. 2 (Apr. 1953).

This number is devoted to the Fourth All-India Leprosy Workers' Conference, which was held in Puri in the end of 1952, under the auspices of the Indian Leprosy Prevention Society and its Orissa Branch. The Governor of Orissa pointed out in his

inaugural speech that one in every seventy persons in Orissa suffers from leprosy, and that some 170,000 persons in this State suffer from the disease, of which about 67,000 may be considered as infectious. It is also calculated that more than 15,000 children are infected with leprosy every year in India. "Segregation in village isolation centres is to be preferred to institutional segregation, firstly because the cost will be very much less, secondly because the patients will be within easy reach of their families and will not be oppressed by the sense of isolation and exile, thirdly because the village will become leprosy-conscious". The Conference was presided over by Sri Devadas Gandhi, a son of the Mahatma. He emphasised that the leprosy problem demands the closest co-operation between official and non-official agencies, and that antileprosy work should be given a high priority in the national programme. He also said that the number of persons in India now calculated to be suffering from leprosy was 2 million, and that neglect could mean that in a few years the figure might go up to 3 million. Dr. Dharmendra, speaking of a report that leprosy might be made a cause of divorce in the projected Hindu Marriage Act, asked: "Why of all infectious diseases single out leprosy? This discriminative treatment is likely to have a baneful effect on the anti-leprosy work in the country. If it is permitted to take shape, most of what we have been doing during the past several years in our attempt to reorientate and rehabilitate the opinion of the public, so that they come to adopt a rational attitude towards the disease, will be undone." Several interesting papers were read and discussed, the subjects dealing with both medical and social aspects of leprosy. There were 190 Indian delegates and some 4 or 5 from outside India. The Indian Association of Leprologists took advantage of the occasion to hold its annual meetings. E. MUIR.

International Journal of Leprosy, Vol. 21, No. 1 (Jan.-Mar. 1953).

The Classification of Leprosy with a Primary division into "Benign" and "Malign" Classes, by R. Chaussinand.

The writer pleads for a simplified classification which can be understood and used by leprosy specialist and non-specialist alike. He divides the disease into two large primary groups—Benign and Malign. The former includes the tuberculoid, indeterminate and borderline forms; and the latter the lepromatous. He justifies the inclusion of the indeterminate cases in the benign group as some are stable and some change into tuberculoid. He gives a warning that if the lepromin test is negative in untreated patients a malign development is to be feared. It is more difficult to understand his inclusion of the borderline cases in this group as he says the

skin lesions are 100% positive and the lepromin reactions are negative. He holds that they are an evolution stage of major tuberculoid and frequently follow a reactive state. Histological examination shows the presence of both tuberculoid and lepromatous cell groupings. The secondary classification follows the usual lines.

Treatment of Leprosy with Thiosemicarbazone and DDS; A comparative series among Australian Aborigines, by A. H. Humphry.

Ten Australian aborigines who had not responded well to sulphetrone were given thiosemicarbazone for 12 months. At first they showed some improvement but later they mostly relapsed to their previous condition.

Twenty-eight new cases were divided into two groups of 14. Half were given Neustab and half DDS. The latter showed distinctly better results than the former. No satisfactory explanation could be given for these results.

Clinical Trial of Thiosemicarbazone, by R. S. Buker.

The object of this experiment was to find the most suitable drug for the treatment of villagers living under primitive conditions away from the central colony. Two groups of patients of about 60 in each, one in the central colony and one in a preventive village, were taken. Half of each group were given 75 mgm daily and the other half 150 mgm. All types of cases were treated and the experiment lasted 18 months. It was found that all patients except one benefited whether they had the smaller or large doses. As with DDS, no bacteriologically negative cases were obtained but fewer had leprosy reactions. Except that the cost was four times that of DDS it was considered an excellent drug for use in underdeveloped areas with large groups of patients.

The use of Haemagglutination reactions and the conditional haemolysis test in the serological diagnosis of Leprosy, by C. Gernez-Rieux, E. Montestruc and A. Tacquet.

The sera of 78 leprosy patients of various types free from active tuberculosis, were examined simultaneously by the Middlebrook-Dubos haemagglutination test and the conditioned haemolysis test, using with both tests sheep red cells sensitized with tuberculin or with polyoside St isolated from that tuberculin. The agglutination test gave a larger percentage of high dilution reactions with leprosy sera than with sera from cases of active tuberculosis, while the reverse was observed with the haemolysis test. It is held that these reactions may have some diagnostic value, for positive results were seen in 7 of the 13 cases whose diagnosis could not be confirmed bacteriologically.

The Kahn Universal Serological Reaction in Leprosy, by Sister Hilary Ross and F. Gemar.

Kahn is of opinion that in lepromatous leprosy the serological pattern of the Universal reaction is distinctive and entirely different from the patterns obtained in either syphilis or yaws. The writers applied the universal serological reaction to the sera of 130 leprosy patients (20 tuberculoid and 110 lepromatous) in 1947 and repeated the test on 10 of the latter after 4 years and compared it with 20 healthy controls and 5 known cases of syphilis. They conclude that "From our results there is no indication of any distinctive serologic pattern in lepromatous leprosy. Although the test is time-consuming, it is felt that serum reactors in leprosy are biologically significant, and that yearly checking of the universal serological test may be of some prognostic value. Our results though meagre, indicate that treatment can alter the type of the pattern in lepromatous leprosy."

La Microscopia fluorescente en leprologia, by M. A. G. Prendes, A. F. Carbonell, V. Pardo-Castello and A. C. Hernandez.

The writers describe in detail a method of staining leprosy slides by the fluorescence method with auramin O which they hold is far superior to the ordinary Ziehl-Neelson method. In a total of 100 cases they found this method gave positive results in 75% of cases compared with 30% with Z.N. stain. In 15 cases, only granules were found, but they say that these are characteristic and would not be confused with other things.

An attempt to confirm growth of Mycobacterium leprae murium on chorioallantoic membrane of live chicken embryos, by J. W. Millar.

The writer failed to confirm the report of R. Noel and Soeur Marie Suzanne that *M. leprae murium* multiplies on the chorio-allantoic membrane of the developing chick embryo, or that following three passages on membranes the bacilli produced typical rat leprosy within 27 days after testicular inoculation. On the other hand he found that the bacilli suffered a marked loss of infectiveness during only four days on the allantoic membrane, and a continuous decline in the number of bacilli which can be recovered.

Chemotherapy of Murine Leprosy, by Y. T. Chang.

I. The Use of Mouse Leprosy as the chemotherapeutic test.

The first paper describes the method used of inoculating peritoneally young female mice with the Hawaiian strain of rat leprosy. The internal organs revealed marked lepromatous growths by the 3rd and 4th months. The 3rd month was therefore chosen as the period for comparing the effect of various drugs against controls

which had no treatment. The index of chemotherapeutic effectiveness (ICE) was calculated as follows:—

Total Leprosy Index of Control Group: Total Leprosy Index of the
Treated Group.

The leprosy index was worked on a grading of the number and size of the lepromata in the various organs affected.

II. The effects of streptomycin, sulphones and isonicotinylhydrazines on mouse leprosy.

This second paper gives the results using the above technique. The isonicotinylhydrazines were found to be the most effective of these drugs in the suppression of the leprosy infection. Streptomycin was found to have a degree of activity similar to DDS. Diasone was the least active. Combined therapy with streptomycin and DDS showed an additive effect. The order of the antileprosy activity of these different drugs was as follows: Marsilid, Nydrazid, Streptomycin combined with DDS, DDS, Streptomycin, Diasone.

The Viability of Mycobacterium leprae murium in tissue stored with dry ice, by P. C. Eisman, S. G. Geftic and R. L. Mayer.

Lepromata aseptically removed from rats or mice were immersed in a quick freeze bath of dry ice and acetone and stored for intervals of from one to forty-two weeks (1-42) and then thawed at 5°C. and prepared as a 10% suspension and inoculated into rats or mice. All the frozen lepromatous tissues proved capable of inducing lepromata at the site of inoculation. No apparent loss of infectivity had occurred.

G. O. TEICHMANN.

International Journal of Leprosy, Vol. 21, No. 2 (April-June 1953).

The Pan-American Classification of the Forms of Leprosy, by J. M. M. Fernandez.

In this article the writer seeks to interpret the Pan-American Classification of Leprosy and to answer criticisms especially of the use and interpretation of the word Indeterminate. He says that the fundamental feature adopted for the classification is the histological structure of the lesions, and the forms are identified and designated on that basis, although the clinical aspects of the lesions, the immunological reaction, and the bacteriological findings must be considered along with this. Leprosy starts with a simple inflammatory process, a lymphocytic infiltrate located in the skin and nerves, which is clinically manifested by macules or by areas of anaesthesia. This form of onset, undifferentiated or neutral, in which the organism has not yet defined its attitude towards the invasion of the leprosy bacillus, is the "Incaracteristica" or Indeterminate form of the Pan-American classification. The disease

may remain in this condition; (hence its inclusion as a separate group) and regress temporarily or permanently, or evolve into one of the polar forms—tuberculoid or lepromatous. Histopathological examination may reveal an intermediate stage first described by Wade and called by him the Borderline ("Limitante") form which was not included in the original Pan-American classification. In it, both tuberculoid and lepromatous infiltrates are seen in the sections. He considers this a reactional phase. Once the process has reached its peak or maturity in the polar stage, it may regress spontaneously (exceptional) or under the influence of treatment (frequent). Thus is initiated a post-lepromatous or post-tuberculoid stage of regression, and this may go on until all signs of activity have disappeared; or else reactivity may start again and may take any of the previous forms. In short, experience shows that once the disease is started, no path of evolution is closed to it, although customarily it tends to follow determined courses.

In rural areas where histological examination is impossible, all macular or polyneuritic cases which cannot be definitely identified as L or T should be classified as Indeterminate. In the Pan-American classification the polyneuritic cases are placed as varieties of the three principal forms, and lepra reactions are classified according to the form in which they occur.

The Prevalence of Leprosy in the Cook Islands, by J. Numa.

This group of 15 small islands none of which is over 4 miles in diameter, is scattered over a large area of the South Pacific. They are divided into a northern and southern group. The total population is 15,079 of whom the majority is Polynesian. In the northern group, the people are closely related, and leprosy was introduced into the northernmost island by a returned emigré labourer in 1860. Since 1926, all known cases have been sent to the Makogai Central Hospital, Fiji. By 1951, 238 cases had been sent there, and a further 44 new cases were awaiting transport. Because of these transfers, leprosy had decreased in the northern islands, but there had been an increase in the southern group.

In the northern group between 1926-38 there were 80 tuberculoid and 43 lepromatous cases.

In the northern group between 1939-51 there were 50 tuberculoid and 1 lepromatous case.

In the southern group between 1926-28 there were 10 tuberculoid and 7 lepromatous cases.

In the southern group between 1939-51 there were 27 tuberculoid and 13 lepromatous cases.

Comparison of Diaminodiphenylsulphone and Thiosemicarbazone in the treatment of Lepromatous Leprosy, by F. Sagher and N. Brand.

In this report a comparison is made of the clinical and bacteriological results obtained in 60 cases of lepromatous leprosy treated as inpatients in a hospital in Jerusalem with DDS or thiosemicarbazone. Their conclusions are that both drugs influence leprosy favourably but that thiosemicarbazone is somewhat more efficacious than DDS. This is not very clear from the tables given, but this is probably because 18 so-called inactive cases are included, 9 of which were bacillus negative before treatment started. They remained negative during treatment and according to the writers would probably have been classed as Indeterminate by other leprologists, as they were lepromin negative.

The Pilomotor response to intradermally injected Nicotine: An aid in excluding the diagnosis of leprosy, by H. L. Arnold.

The injection of Nicotine Picrate 1 in 100,000 intradermally gives a normal pilomotor (gooseflesh) reaction in the region of the macules of vitiligo, seborrhoeic dermatitis, lichen planus and other skin conditions, but fails to do so in or near a leprous lesion. On the face, however, care must be taken, as in non-leprous lesions the reaction is frequently negative. The aqueous solution of nicotine picrate is stable, and the test is easy and is of greater value than the histamine test. A positive response is strongly indicative that the lesion is not leprosy.

The effect of BCG in lepromatous cases of Leprosy, by John Lowe and F. McNulty.

This paper is a continuation of the study on BCG vaccination reported in *Lep. Rev.* 24 (1953) 104 lepromatous cases were given a single intradermal injection of 0.1gm BCG and in 12 the lepromin test was converted from negative to positive. The patients were having treatment and most of them were still bacteriologically positive. There is no proof that the lepromin reaction becomes positive more easily in those cases that have become bacillus negative. The study indicates that the change is often temporary and does not improve prognosis.

In an addendum the writers say that later retesting with lepromin showed quite a high conversion to positive and they are endeavouring to keep them positive by repeated oral administration of BCG, for repeated injections the Koch phenomenon would be serious. The possibility of reducing the danger of relapse in discharged patients and of the transformation of undeterminate cases with a previously negative lepromin reaction is considered.

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