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The following are abstracts (made by Dr. G. O. Teichmann) of the original articles in this issue.

M. Casile, H. Saccharin and P. Destombes write on "An Anatomico-clinical Study. Tuberculoid leprous neuritis, with Caseation, of the posterior tibial nerve, with arteritis."

A patient who had no other signs of leprosy and who had been treated in hospital in French Guiana, and had received many diagnoses, finally had his left leg amputated because of persistent and severe pain. On dissection the posterior tibial nerve was found to be much thickened and irregular, the enlargement extending to the plantar branches; the anterior tibial was slightly larger than normal, but the external peroneal was quite normal. On histological examination tuberculoid caseation and a few bacilli were found. The authors point out how easily a case like this can be missed for a long time when there are no other signs of leprosy.

(The article indicates that there was loss of sensation of the lower leg and foot, and perforating ulcer of the sole.)

J. M. M. Fernandez, B. Appel and E. Dougherty, write on "Influence of hydrocortisone, cortisone, and ACTH on the lepromin reaction."

The object of this study was to ascertain the influence of the hormones especially hydrocortisone on the two responses, early and late, which are induced by the intradermal injection of lepromin in positive reactors. As it is widely believed that the 48 hours Fernandez reaction is of an allergic nature, whereas the 3-week Mitsuda reaction is the expression of a state of resistance or relative immunity, it was particularly desired to ascertain if the hormone has an inhibitory effect only on the former or also affects the latter. Twenty-one adults who had had no contact with leprosy and six who had had household contacts were observed. Intradermal injection of hydrocortisone followed immediately by that of antigen in the same wheal, were given on the left side of the back, while a single injection of antigen alone was given on the right side in a similar position and the results compared. Other cases were tested with hydrocortisone and tuberculin, Frei and Ducrey antigens. It was found that the local injection of hydrocortisone acetate provoked partial or total inhibition of the early reactions of hypersensitivity to lepromin, to tuberculin and to the Frei and Ducrey antigens.

The late (Mitsuda) reaction to lepromin is also inhibited, the drug impeding the formation of the tuberculoid granuloma which characterises it. In two cases in whom the hydrocortisone was inoculated on the 21st day into the positive Mitsuda nodules, the nodules disappeared leaving a slightly atrophic yellowish plaque. In cases receiving general treatment with cortisone or ACTH, the Fernandez reaction occurred with much less frequency than in cases not so treated, and the Mitsuda reaction was positive usually in low degree in only 50% of the cases. The authors state, "The question remains, 'Does this parallelism of the results mean that these phenomena are two stages of one and the same process, or does it simply mean that the hormone inhibits all tissue reactions in situ regardless of their nature?'"

Two articles, one by H. Floch and the other by O. Diniz and H. A. Neto, discuss the use of dilute antigen in the Mitsuda reaction, and an editorial by Wade discusses the same subject.

More and more stress is being laid on the use of the Mitsuda test and yet, because of the success of modern treatment, it is becoming increasingly difficult to get bacilli-rich lepromas with which to make lepromin. For this reason, various attempts have been made to use diluted antigen. Wade writes in the editorial: "Floch is convinced that the 'normal' antigen (which he holds to be 1:30 incidentally, whereas Hayashi's technique makes a 1:20 preparation) is too concentrated. He finds that the lessening of intensity of the response does not parallel the degree of dilution of the

antigen, but occurs more or less stepwise. The results with a 1:50 dilution do not differ much from those with the normal dilution, and he recommends its use. He finds a second zone in the region from 1:300 to 1:750. Further dilution, to 1:1000, again affects the results considerably. In the intermediate zone the positive results, he states, can be correlated with those obtained with the normal dilution by adding one plus (1—) to the reading.\*

Diniz and Neto tested a large number of children by giving three injections in the thigh or forearm and comparing the results. Two observations were made. The first was the Fernandez reaction after 48 hours, and the second was the Mitsuda after 21 days. Analysis of the results showed that both of the reactions with dilute antigens were closely comparable to those obtained with the 1:20 control. There was, however, a slight lessening of positivity with increase of the dilution. The findings with the Mitsuda reaction are summarised as follows:

<i>Antigen</i>		<i>Positive</i>	<i>Negative</i>
1:20	...	78.7%	21.3%
1:750	...	65.6%	34.4%
1:1000	...	49.3%	50.7%

They suggest that to save antigen a preliminary test might be done with dilute antigen. If this is positive the patient will be a lepromin positive individual. If the test be negative the patient can then be re-tested with normal 1:20 concentration.

R. D. Azulay and L. M. C. Andrade write on "Demonstration of *M. leprae* in sections in 532 cases of leprosy; a comparative study between Ziehl-Klingmuller and the Wade-Fite techniques." Their own summary is as follows:—

"The authors have made a comparative study of two methods of staining *M. leprae* in paraffin sections of biopsy specimens of the skin, namely the Ziehl-Klingmuller method and the Wade-Fite in which, according to Wade, the bacilli are protected from extraction of their lipids during the deparaffinization. The data of the findings show differences which are statistically significant, and the following conclusions are drawn.

"1. That the Wade-Fite method of staining gives better results in demonstrating *M. leprae* than does the Ziehl-Klingmuller method.

"2. Repeated examinations of a number of specimens showed that in most cases the results remained the same, thus demonstrating that positivity actually depends on factors inherent in the method itself.

"3. The fact that there were 38 cases found positive (1—) with the Wade-Fite method but negative with the other, of which only 9 were positive in smears made from the biopsy specimens, suggests that the new technique is not exclusively one of protection of the acid-fastness of *M. leprae* in the lesions, but that it also has the property of restoring acid-fastness which has been lost in the tissues."

Eric Waaler writes on "Leprosy and Cancer." His own summary is as follows:—

"The author gives a short report of a case with basal-cell carcinoma and leprosy in the same lesion, and a review of the older and more recent literature on this subject. The old presumption that leprosy to some degree protects the patient against cancer is not supported in the modern literature. The occurrence of skin cancer in lepromatous granulation tissue

does not appear to be very common, and the combination of the two diseases in the same lesion is mainly of diagnostic interest."

J. H. Hanks and C. T. Gray write on "The application of Metabolic Studies to Leprosy Research," and J. H. Hanks on "The Influence of Physical and Chemical Factors on the Hydrogen Transfer Capacity of Murine Leprosy Bacilli." These two articles are highly technical and it is impossible to do justice to them in a brief abstract. They report studies of *M. leprae murium* in vitro, of its hydrogen transfer capacity, and of its oxygen consumption; and of its infectiousness and of the influence of various factors, such as anaerobiasis, environment, pH and blood serum on these findings. Hanks' paper ends:

"This study provides evidence that metabolic activity, properly measured, affords an index of the infectiousness of murine leprosy bacilli after incubation in vitro."

Sister Hilary Ross writes on "The Results of a Modified Middlebrook-Dubos Hemagglutination Test in Leprosy; 261 cases." Her own summary is as follows:—

"The Middlebrook-Dubos hemagglutination test (Scott-Smith modification) was performed on sera obtained from 261 leprosy patients in whom tuberculosis had been excluded. A single test was made in 240 patients; three or more tests were made during a period of one year in 21 other patients who represented different treatment groups—sulphones, thiosemicarbazone, or isoniazid.

"Of the 261 cases, 231 (88.5%) had hemagglutination titers higher than the highest (i.e. 1:8) found in the control group. Of a group of 169 clinically active lepromatous cases with bacilli, 91.1 per cent had titers above the normal range. Of a group of 52 lepromatous cases which were clinically quiescent and in which bacilli were not found, 75 per cent had titers above normal. Of the 40 tuberculoid cases, 28 (70%) revealed titers above 1:8; the highest reached was 1:256, as compared with 1:4296 in the lepromatous group. The graph shows the marked difference between the lepromatous and tuberculoid cases as regards the distribution of the titers.

"Serial hemagglutination tests made over a period of one year on 21 cases under therapeusis showed decrease of titer in 6 cases, no change in 7, and increase in 8. The disease progressed in the 8 cases in which an increase in titer was noted. Clinical and bacteriological improvement was noted in six cases in whom the titer decreased."

Joseph Portnoy and W. F. Edmundson write on "A Simple Procedure for the Identification of Nonsyphilitic Reactions in Serologic Tests for Syphilis in Leprosy Patients." Their own summary reads as follows:—

"A simple procedure for the differentiation of syphilitic and non-syphilitic reactions obtained in serologic tests for syphilis with leprosy sera is described. The behaviour of this procedure with sera of normal individuals, syphilitic patients, and patients with leprosy (with or without

evidence of syphilis) is presented. With antigen suspensions containing choline chloride, sera of syphilitic patients (with or without leprosy) show an augmentation of sero-reactivity; non-syphilitic reactive leprosy sera show a diminution of sero-reactivity. On the basis of the clinical and historical evidence, a good correlation was obtained between the differential procedure described and the results of the T.P.I. test in normal persons and in syphilitic, non-leprosy individuals. The differential procedure compared favourably with the T.P.I. test in leprosy patients with and without clinical or historical evidence of syphilis. A comparison of reactivity levels of the differential procedure, the VDRL slide test, and the T.P.I. test is presented and discussed."

The second part of the translation by G. L. Fite of Virchow's "Leprosy" from "die Krankhaften Geschwülste," published in Berlin in 1863, is published as a reprinted article.