Fernandez reaction—7 out of 9. Of the total of 73 early positives, 70 were among the Mitsuda reactors, although there were 3 among the negatives. Yet it will be noted that in both Groups 2 and 3 (tuberculosis factor present), the late reactors were divided practically equally with respect to the early reaction.

On the other hand, a very few early reactors may be found among Mitsuda negatives, even—rarely—in the absence of tuberculin reactivity, which facts are difficult to explain.

To return to the Mitsuda results of Group 1, the finding that only 6.5 per cent were prepared to react positively to the first test differs notably from the findings in the Philippines of Guinto et al. [THE JOURNAL 23 (1955) 32-47] who, dealing with healthy, country schoolchildren 7-9 years of age, got 34.0 per cent Mitsuda positives among 153 tuberculin negatives—proportionately over five times as many as in my group.

On the other hand the 92.8 per cent of my Group 2, where only the tuberculosis factor is known to have been operative, is materially higher than the 77.5 per cent that Guinto et al. got in their 391 tuberculin-positive children. This difference would be hard to explain, unless it could be done on the ground of a difference of antigenicity of the lepromins used.

In considering these results in tuberculin negative children the Editor would doubtless give some importance to a third factor, i.e., environment. The orphanage children had spent all of their lives—or some material proportion thereof immediately preceding the testing—in the institution where the environment is exceptionally clean. Consequently, they had been protected from nonspecific, natural influences of the outside world, especially the soil, which might “condition” the individual to react to lepromin (or to large doses of tuberculin). These influences would have been at play in Guinto’s children.

Be that as it may, the comparison between the two groups of orphanage children is an exceptionally “pure culture” observation of the influence of natural contamination with the tubercle bacillus.

25 de Diciembre 811
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J. M. M. Fernandez

THE LEPROMIN REACTION IN TUBERCULOID REACTION CASES

(Continued)

To the Editor:

Some time ago there was a lesser symposium in The Journal [24 (1956) 86] about the weakening or abolition of responsiveness to lepromin in tuberculous cases during clinical reactions. The specific question was whether or not a patient with tuberculoid leprosy who was strongly reactive to lepromin before the clinical reaction would become completely nonreactive during that condition. However, certain of your correspond-
ents showed interest in the more general question of depression of lepromin reactivity of any degree during clinical reactions.

Besides the contributor (Rodriguez) whose opinion had led to the inquiry, there were two others (de Souza Lima and Schujman) who believed that strong reactors would not become completely negative. One (Fernandez) said it could happen, and another (Basombrio) gave data on a group of cases which comprised two previously strong reactors who did become negative. It is obviously the weak reactor, however, who is likely to lose his reactivity, while on the other hand lepromin reactivity is not always affected in clinical reactions. Fernandez said that "... in many cases, the lepromin reactivity is not at all modified during the reaction;" and of the 74 cases listed by Basombrio, 15 had shown no change of reactivity.

We have long been interested in problems of the lepromin reaction in tuberculoid cases, and have recently had occasion to review the findings in clear-cut cases of that type dealt with in two of our studies, comparing the results in bacteriologically negative and bacteriologically positive cases. In both studies the patients were adults, and in each instance the strength of the antigen used was constant. With each separate test, therefore, the important variable factor was the reactivity of the individuals.

A large proportion of the bacteriologically negative cases were nonreactive, and for convenience that group is so designated, although there were some cases with mild clinical reactions; the bacteriologically positive cases were in strong clinical reaction. If it were feasible to transfer the cases in mild reaction from the former to the latter group, it would probably serve only to increase to some degree the differences between the two that were found. The antigens used were, (a) E. Mabalay's variation of lepromin; (b) Wade's standard lepromin; and (c) Wade's purified bacillus suspension (a preparation which commonly gives somewhat weaker reactions than the regular lepromin, as shown in a report in preparation).

The patients tested with the Mabalay lepromin were given only the single test injection. The two Wade preparations were compared by means of simultaneous injections in contralateral sites in the same patients. The late reactions were read, as recommended by the WHO Committee: less than 3 mm., negative; 3-4 mm., doubtful (+); 4-7 mm., weakly positive (1+); 8-9 mm., moderately positive (2+); and 10 mm. or larger, or any with ulceration, strongly positive (3+). The results are shown in the following tabulation.

In the group of patients tested with the Mabalay lepromin there was a marked difference in the results given by the bacteriologically negative and positive patients. Of the former none was negative, while of the latter were 2 negative. It cannot, of course, be said how reactive to lepromin the two nonreactors might have been before the tuberculoid reaction occurred, but with lepromins we use typical tuberculoid cases are
almost always positive in some degree. If the nonreaction cases had contained negatives in the same proportion, they would have had 11 of them.

More significant, probably, is the fact that none of the bacteriologically positive patients gave a strong Mitsuda reaction, against 30 per cent of the bacteriologically negative cases—at which rate 6 of the 19 in the former group should have reacted strongly if their condition had not affected their responsiveness.

The same trend is seen in the group tested with the regular Wade lepromin, although to a lesser degree. None of the bacteriologically positive cases was entirely nonreactive (which may have been simple chance), but 2 of them gave strong reactions—which of course may also be dismissed as due merely to chance, although we are not inclined to do so. The whole picture, including the 27.3 vs 60.0 per cent of combined stronger reactions, suggests that there was a distinct difference in the two lots of patients.

Why the cases in strong reaction tested with the PBS antigens showed no material difference in results from the cases in the other group we are not prepared to say. Only a preliminary study has been made with that preparation as yet.

On the whole, the data obtained from separate testing of groups of nonreactional and reactive tuberculoid patients—the latter groups unfortunately small—are entirely in keeping with the general experience that there is usually a lowering of lepromin reactivity during clinical reactions, but not frequent negativization.

Our figures suggest that the statistics of the matter, and the over-all experience of different workers, may be affected by a factor which, to our knowledge, has seldom been considered, namely, differences of effectiveness of different preparations of lepromin of the classical Hayashi-Mitsuda type.

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Ricardo S. Guinto
Mario C. Mabala

<table>
<thead>
<tr>
<th>Degree of Mit (Mitsuda) reaction</th>
<th>Group 1, Mitsuda</th>
<th>Group 2, Wade standard</th>
<th>Group 2, Wade PBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonreactional tuberculoid (B+ 110 cases)</td>
<td>Nonreactional tuberculoid (B+ 110 cases)</td>
<td>Nonreactional tuberculoid (B+ 110 cases)</td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>5 (4.6%)</td>
<td>3 (2.9%)</td>
<td>4 (3.6%)</td>
</tr>
<tr>
<td>Weak, 1+</td>
<td>54 (48.6%)</td>
<td>13 (48.0%)</td>
<td>13 (43.1%)</td>
</tr>
<tr>
<td>Moderate, 2+</td>
<td>14 (12.7%)</td>
<td>2 (10.3%)</td>
<td>1 (9.1%)</td>
</tr>
<tr>
<td>Strong, 3+</td>
<td>32 (28.6%)</td>
<td>2 (10.5%)</td>
<td>11 (10.4%)</td>
</tr>
<tr>
<td>2+ &amp; 3+</td>
<td>46 (40.6%)</td>
<td>2 (10.5%)</td>
<td>23 (20.9%)</td>
</tr>
</tbody>
</table>

Tests with both antigens made simultaneously in 35 nonreactional and 11 reactional cases.