

CULTIVATION OF THE LEPROSY BACILLUS

In the fourth issue of the JOURNAL last year [23 (1955) 483] were abstracts of reports by S. Americano Freire of cultivation work in which he had obtained from leprosy materials growths of an acid-fast bacillary form and of a yeast-like form believed also to represent the leprosy bacillus. In connection with the article on the technique of this work which appears in this present issue, the author sent in the following supplementary letter, reproduced without comment.

TO THE EDITOR:

Work carried out subsequent to that reported in my previous papers has confirmed the findings recorded there and carried them a step further. I have discovered a new method of culture which allows of the isolation of the Hansen bacillus with the same facility as in the case of the bacillus of Koch. By the earlier technique new globi are obtained but subcultures cannot be made. By the new method subcultures can be made in series, as with any other bacteria.

Based on this technique I have established a method of chemotherapy testing with the culture of the Hansen bacillus obtained directly from the leproma. Of the medicinal substances used only the sulfones are active. Streptomycin, PAS, isonicotinic acid hydrazide are inactive. New leprostatic drugs can now be investigated *in vitro*.

I was able by this new method to identify strains of the bacillus which are not only resistant to sulfone, but dependent on it. This opens up a new aspect—the possibility of knowing whether the patient is being benefited by sulfone treatment or not. The bacillus in question was obtained from a patient who had undergone prolonged treatment with that drug. The fact that the bacillus used in the chemotherapy tests was sensitive only to sulfone suggests that it is *M. leprae*.

I am perfecting a method by which I have been able to produce globi in my cultures of bacilli and in some grown by Souza Araujo, although four strains of *M. tuberculosis* produced no globi. The globi were typical, with gloea well in evidence and bacilli "en paquet."

In chemotherapy tests with cultures of pseudoyeasts isolated from a leprous patient, of 49 substances used none was bacteriostatic (in an anaerobic medium); sulfone, on the contrary, stimulated growth. This is in accord with the fact that in lepromatous patients treated with sulfones the numbers of Hansen bacilli decrease in proportion to the increase of pseudoyeasts and other cyanophil forms in the nasal mucosa, earlobes and skin.

Continuing with the inoculation of cultures of the Hansen bacillus into various species of animals, I have observed the appearance in their internal organs of the

same forms of the cyanophil and acid-fast cycle met with in the autopsy of a tuberculoid leprosy patient as well as in the affected peripheral nerve.

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