

TO THE EDITOR:

Leprologists in general seem not to have taken very seriously the idea that other than the familiar bacillary form of *M. leprae* may exist. The most serious claims to have accomplished the demonstration of such forms, and indeed their cultivation, were made some years ago by Eleanor Alexander-Jackson.

In 1945<sup>1</sup> and later she reported at length on the subject with respect to the tubercle bacillus, subsequently turning her attention to the leprosy bacillus.<sup>2</sup> She reported the cultivation from 10 of 11 specimens of blood from leprosy patients, of a nonacid-fast pleomorphic microorganism from which there developed, among other forms, “amorphous ‘L’ type clumps” (“also known as pleuro-pneumonia-like, zooglear, symplastic, or matrix forms”) and eventually acid-fast rods said to resemble the leprosy bacillus.

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<sup>1</sup> ALEXANDER-JACKSON, E. A hitherto undemonstrated zooglear form of *Mycobacterium tuberculosis*. Ann. New York Acad. Sci. **46** (1945) 127-252.

<sup>2</sup> ALEXANDER-JACKSON, E. The cultivation and morphological study of a pleomorphic organism from the blood of leprosy patients. Internat. J. Leprosy **19** (1951) 173-186.

Manalang<sup>3</sup> was cited as saying that "a specific agent, probably a virus, precedes the appearance of the acid-fast *M. leprae*," but his views on the matter were speculative since he had not actually demonstrated the existence and development of any such form.

Relatively recently, Mattman and associates<sup>4</sup> reported the production, supposedly for the first time, of "L" forms (i.e., bodies without cell walls) of mycobacteria, including tubercle bacilli. There were produced large, round, nonacid-fast bodies which would rupture and give rise to filterable granules which, under proper conditions, would revert to the bacterial form.

This report brought to mind a solitary observation with the leprosy bacillus made several years ago which may be significant. It has never been recorded for lack of follow-up observations, but the observation is recorded here because it seems to parallel—so far as it went—the observations just cited.

On two occasions in 1947-1948 I made at Carville some paraffin-sealed wet preparations of leprosy bacilli for phase microscope study. The specimens were taken by air from New Orleans to Buffalo, New York, where they were examined with Dr. Oscar W. Richards at the American Optical Company. On the second trip the elapsed time before the material was put under the microscope was 24 hours. The principal findings were reported at the Havana Congress.<sup>5</sup>

On that occasion a certain field was left under the oil immersion objective overnight. On the following morning there was observed in the field an unusual large, round form in which there was a reversal of the optical effects, with particles which were dark with the bright-contrast objective used. Dr. Harold Osterberg was asked for an explanation of that phenomenon. He had looked at the specimen for only a short time when he exclaimed, "The thing has ruptured, giving off several small granules." This was confirmed by the other of us; there were several small granules lying near what had become an empty shell.

The possibility that the object studied might have been a contaminant seemed to be ruled out by the fact that no growth of any contaminating microorganism was apparent. The bacillary forms in this and other specimens were as scattered as they had been on the previous day. It was realized that some growth changes could have taken place, for the suspending fluid was saline mixed with tissue juice of the lesion which would have supplied nutrients.

This was before anything was known—by us, at any rate—of the L forms of bacteria. However, the observation was so interesting, so suggestive of a possible development of a "virus" form of the bacillus, that phase equipment was acquired before I returned to Culion. The idea was to observe many such preparations, one at a time, each at intervals for considerable periods. At Culion, however, the pre-war facilities had not been restored; electric power was available only in the evenings, and that made it impossible to carry out the intended observations.

<sup>3</sup> MANALANG, C. Significance of findings in biopsy materials from lepers. Philippine Hlth. Serv. Mo. Bull. **11** (1931) 633-638.

<sup>4</sup> MATTMAN, L. H., TUNSTALL, L. H., MATHEWS, W. W. and GORDON, D. L. L variation in mycobacteria. American Rev. Resp. Dis. **82** (1960) 202-211 [abstract in THE JOURNAL **29** (1961) 385].

<sup>5</sup> RICHARDS, O. W. and WADE, H. W. Application of phase microscopy to the examination of the leprosy bacillus; preliminary note. Trans. V. Internat. Congr. Leprol., Havana, 1948; Havana 1949, pp. 517-525.

This fragmentary observation is related in the hope that it may be confirmed by someone with the necessary facilities—and curiosity.

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