

In certain forms of acquired immunity, i. e., that immunity which results from exposure to a pathogenic agent or other antigenic stimulant, there are in the serum specific antibodies developed as a result of that

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<sup>1</sup> We are permitted to mention certain unpublished observations made some time ago at the U. S. federal leprosarium at Carville, La. During a visit by Dr. R. V. Wardekar, he and Dr. R. R. Wolcott made a number of chloroform-extraction examinations of healthy staff members, finding in their skin specimens only an occasional, morphologically atypical acid-fast bacillus. On the other hand, in a tuberculoid leprosy case with a solitary lesion on the leg, a skin specimen from the shoulder was found to contain numerous bacilli that were morphologically suggestive of *M. leprae*.

exposure. About natural or innate immunity, on the other hand, little is known of the factors involved.

Louis Pillemer and associates, of Western Reserve University in Cleveland, Ohio, have reported the discovery of a new, normal serum protein which they call "properdin" (from *perdere*, to destroy). This substance, a euglobulin with a molecular weight at least eight times that of gamma globulin, is not an antibody, but under certain conditions it participates in such diverse activities as the destruction of bacteria, the neutralization of viruses, and the lysis of certain red cells.

The different concentrations in the sera of different animals have a highly suggestive parallel with the natural resistance of those animals to infection. The rat, notoriously resistant, has the highest titer, 25-50 units per cc., while the guinea-pig, a susceptible animal, has only 1-2 units. Normal man is in the intermediate zone, with 4-8 units, at the same level as the rabbit but below the hog and cow and above the sheep.

A summary account of the work done on and with this substance at the time was published last year,<sup>1</sup> with one appendix giving detailed instructions for the titration of properdin and another on its purification. Recently the *J. A. M. A.*<sup>2</sup> had an editorial review of that article, ending with the following statement:

Properdin has not been demonstrated to play a role in the living animal, and we cannot be sure that it plays a significant role, if any, in natural immunity. However, it provides a basis for further investigation into the cause of natural immunity, since nonspecific types of resistance are important defences against the daily assaults made upon man and animals by bacteria.

The possibilities of this line of investigation for exploring some of the peculiarities of leprosy are obvious. Does the resistant tuberculoid case differ materially from normal in its properdin titer? On the other hand, does it differ significantly from the nonresistant lepromatous case? How about cases in various kinds of reactions as compared with nonreaction cases of the same types of leprosy?

When the *Science* report was called to the attention of the Carville workers, they made inquiry about the possibility of arranging with the Cleveland group to titrate some sera from leprosy patients. The reply, we are informed, was that for the present they are "concerned with elucidating the more fundamental properties of properdin and with developing a more practical method for assay than is now available," but that clinical testing may be expected in the not too distant future.

Students of leprosy will await that time with interest, and in the

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<sup>1</sup> PILLEMER, L., *et al.* The properdin system and immunity: I. Demonstration and isolation of a new serum protein, properdin, and its role in immune phenomena. *Science* **120** (1954) 279-285 (Aug. 20).

<sup>2</sup> [EDITORIAL] Properdin and natural immunity. *J. American Med. Assoc.* **158** (1955) 309 (May 28).

meantime it is conceivable that some venturesome soul will undertake work on his own, following the technique already published.—H. W. W.

DR. FERNANDEZ AN ASSOCIATE EDITOR

Dr. Vincent Pardo-Castelló, of Havana, has resigned as Associate Editor of THE JOURNAL, feeling the need of reducing the number of his many activities. On his recommendation Dr. José M. M. Fernandez, of Rosario, Argentina, was invited to take the position and has accepted.