O-Diphenoloxidase in *Mycobacterium leprae*

TO THE EDITOR:

L. Kato (Int. J. Lepr. **44** [1976] 385-386) makes an oblique reference to the oxidation of DOPA by *Mycobacterium leprae,* in his Letter to the Editor. He refers to his memo in the Leprosy Scientific Memoranda (LSM) to support his statement. Being a privileged publication, LSM may not be available to many readers of the JOURNAL. (Incidentally, the publishers of LSM categorically state that "memoranda in LSM should not be referenced as such.") The findings of Kato and associates were refuted by me in a subsequent issue of the LSM. The values they report for the oxidation of DOPA by hyaluronic acid and yeast extract are similar to those for nonenzymic oxidation of DOPA, and are too low to be of significance. We have repeatedly reported such results in our previous publications. Oxidation of D-DOPA by *M. leprae* has been demonstrated in bacilli separated from skin nodules, spleen and testes of lepromatous patients, from infected tissues of armadillos, and from mouse foot pads. We have established this enzyme activity by measuring oxygen uptake (manometrically and polarographically), by measuring the quinones formed (spectrophotometrically), and by determining the amount of radioactive water produced from DOPA by the organisms. We have also separated

the enzyme in *M. leprae* from the bacterial particles, by detergent-treatment, as a pure protein. The properties of o-diphenoloxidase in the leprosy bacilli have been investigated and found to be different from tyrosinases occurring in mammalian and plant tissues. The enzyme has so far not been detected in any other mycobacteria, obtained from infected tissues of three different species of animals and from cultures.

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