

## BOOK REVIEWS

*Leprosy in India; a Statistical Compendium.* Wardha, India: Centre for Social Science Research on Leprosy, Gandhi Memorial Leprosy Foundation, c1989. Softbound, 153 pp. + charts, RS50 + postage.

"Reliable and handy data are difficult to come by. It is all the more hard when they relate to a field like leprosy.

"Leprosy in India: A Statistical Compendium, I believe, will fulfill a long-felt need. Health-related social and economic statistics included in the volume add to its utility, as does the international comparison. The few charts and maps are of great help in comprehending the global status of leprosy in India.

"This pioneer attempt of the Centre for Social Science Research on Leprosy, ensembling whatever stray information was available, is praiseworthy. I am happy that Dr. A. M. Kurup has been able to conceptualize and guide the compilation of this volume within a short time-frame.

"It is hoped that the volume will be of considerable help to social scientists, clinical scientists and managers involved in leprosy-related issues."—(From the Foreword by M. S. Gore)

**Mukherjee, Rama.** *Vaccines for Leprosy—Present Status and Future Prospects.* Erwin Stindl Memorial Oration 1989. Calcutta: Greater Calcutta Leprosy Treatment & Health Education Scheme (GRECALTES), n.d. Softbound, 20 pp., US\$3.

As the title states, this monograph reviews the subject of antileprosy vaccines. Experiences with BCG, killed *Mycobacterium leprae*, and killed *M. leprae* plus live BCG are reviewed as well as findings with the ICRC bacillus, "*Mycobacterium w*," and *M. vaccae* with and without BCG. The present status of subunit vaccine development is discussed. The paper concludes with an outline of future prospects for leprosy vaccine, pointing out the need for further knowledge of the immunology of the disease and the many practical problems which must

be addressed in the field application of such a vaccine.—RCH

*Mycobacterium tuberculosis; interactions with the immune system.* Bendinelli, Mauro and Friedman, Herman, eds. New York: Plenum Press, 1988, ISBN 0-306-42724-9. Hard cover, 426 pp., illustrated, US\$79.50. Includes bibliographical references and index.

This multi-authored book provides comprehensive coverage of the immunology of the mycobacterioses. Affronti begins the book with a thorough review of mycobacterial antigens, beginning with Koch's Old Tuberculin and ranging to modern recombinant DNA-based peptides. As yet there are no specific tests useful for the clinical diagnosis of tuberculosis. Kato and Yamamoto discuss the adjuvant and immunogenic moieties of *Mycobacterium tuberculosis* in relation to pathogenicity. Buschman and Skamene review natural resistance and acquired immunity to *M. tuberculosis*. In mice host resistance to the growth of mycobacteria and other intracellular pathogens *in vivo* is under the control of a single genetic locus, the *Bcg* gene. The mechanism of resistance seems to involve macrophages that are already primed for activation in resistant animals. In addition to this innate resistance, there also seems to be a tuberculosis susceptibility gene which is HLA-DR2 associated in humans, as is the case with tuberculoid leprosy. Scordamaglia, Bagnasco and Canonica discuss the classic immune response to mycobacteria. Crowle outlines results of studies with human mononuclear phagocyte cultures infected with *M. tuberculosis in vitro*. Moore discusses granulomatous inflammation. Of interest, most mice that have the *Bcg<sup>r</sup>* gene resist infection but do not develop delayed hypersensitivity or granulomatous inflammation after BCG challenge. Kaufmann and de Libero review cytolytic T cells in *M. tuberculosis* infections. As in viral infections, class I restricted, *M. tuberculosis*-reactive CD8 lymphocytes seem to function to lyse the host cell bearing the intracellular para-

site and thereby inhibit mycobacterial growth. Lagrange and Hurtrel outline the immunological perturbations in mycobacterial infections. The regulatory mechanisms of the immune system are basically the same in all mycobacterial infections, but vary depending upon the genetic and environmental predispositions of the hosts and the pathogenicity of the infecting mycobacteria. Orme reviews anergy in experimental mycobacterial infections in mice. A variety of suppressor cells can be demonstrated *in vitro* from animals which are mounting a powerful acquired immune response *in vivo*. Nakamura and Tokunaga discuss suppressor cells. High doses of BCG or *M. tuberculosis* induce an anergic state associated with suppressor T cells, suppressor macrophages, or both. The various mechanisms of immunosuppression are outlined, and it is pointed out that suppressor mechanisms are important for homeostasis. Ellner reviews the immunoregulatory function of mononuclear phagocytes. Campa, Marelli and Benedettini outline the role of B lymphocytes and antibodies in the regulation of cell-mediated immune responses to BCG. At least three types of cells are involved in the suppression of the delayed-type hypersensitivity to BCG in mice infected intravenously: anti-PPD B lymphocytes, anti-Id B lymphocytes, and T lymphocytes. Sultzer

reviews polyclonal lymphocyte activation by *M. tuberculosis*. Tuberculin, aside from its antigenic properties, is a nonspecific B lymphocyte mitogen. Myrvik, Leake and Goren outline the mechanisms of toxicity of *M. tuberculosis* for macrophages. Virulent strains can fragment or disrupt the phagosomal membrane and escape into the cytoplasm of macrophages. Orbach-Arbouys reviews mycobacterium-induced suppressor cells. Smith, Wiegehaus and Edwards discuss the protective effects of BCG vaccination against tuberculosis. BCG may protect against endogenous reactivation tuberculosis but not against exogenous reinfection tuberculosis. Protection in a BCG-vaccinated individual seems to be due to interference with the bacillemlia accompanying the first infection with virulent tubercle bacilli in a nonvaccinated person. Stead and Dutt outline the changes occurring in clinical tuberculosis. Collins discusses *M. avium* complex infections and immunodeficiency.

The book contains a wealth of information for the student of *M. tuberculosis*. Much of the information is of interest primarily to laboratory-based researchers. The book provides a convenient summary of the current state of the art against which future advances can be compared.—RCH