Abstracts

1 **Capreomycin: Activity against Experimental Infection with Mycobacterium leprae.** CHARLES C. SHEPARD, *Science*, Oct. 16, 1964, Vol. 146, No. 3642, pp. 403-404.

Capreomycin is a peptidic antibiotic against *M. tuberculosis* in mice. It is about as active as streptomycin, kanamycin and viomycin, and tubercle bacilli resistant to streptomycin were susceptible to capreomycin. It could replace streptomycin in humans in conjunction with PAS in pulmonary tuberculosis. Toxicity to the drug was infrequent. Shepard and Chang tested it against infection of mice in foot-pads with *M. leprae* and found that it protected against the infection and suggest its controlled therapeutic trial in the human disease.

2 **Studies on Leprosy Bacilli in Man and Animals.** R. J. W. REES, *Proceedings of the Royal Soc. of Med.*, June, 1964, **57,** No. 6, pp. 482-483.

The author gives a description of leprosy in man and animals and points out the common feature of leprosy bacilli is that they still cannot be cultured in bacteriological media, which has seriously restricted the scope of fundamental and applied research. However, considerable advances have been made recently by using rat leprosy bacillus for study with which it has been possible to determine the rate of multiplication as based on divisions only every ten to 14 days. It has also been possible to distinguish dead and live bacilli by the electron microscope. The degenerate form was incapable of producing the disease in mice even in the light microscope such bacilli could be distinguished by irregular staining under carbol fuchian.

Tissue culture methods have been grown more or less continuously by subculturing the infected cells every 20 or 30 days. These rat leprosy bacilli still fail to grow in ordinary bacteriological media but retain their pathogenicity for rats and mice.

Human leprosy bacilli behave similarly under the electron and light microscope and it was found that on average less than 50 per cent of them remain viable. Under treatment with DDS it seemed that certain of the bacilli were dead, but the host was unable to destroy the dead bacilli rapidly or efficiently. It may be that many leprosy manifestations are brought about by dead rather than living bacilli.

Shephard claims the successful transmission of human leprosy to the foot-pads of mice and the work of Rees with 21 strains of varied provenance have produced an infection in the foot-pads of mice and many first passages have been obtained and a few second passages. The calculated generation time of the human bacillus in the foot-pad is about 15 to 25 days. The infection is reproducible in different strains of mice. It could be used for testing drugs and is completely inhibited by DDS.

3 **Histological Observations on 'borderline' leprosy.** KUNDU, S., GHOSH, S. and SENGUPTA, P. C., *Bull. Calcutta Sch. of Trop. Med.*, Oct., 1963, v. 11, No. 4, pp. 148-151. (11 refs.)

The authors recall that borderline leprosy was recognized by the first WHO Expert Committee and later by the Madrid Congress 1953. The histological features were described by various workers, but considerable difference of opinion remains regarding the tissue changes. The authors selected and studied histologically 30 active untreated 'borderline' patients and found that tissue changes were extremely variable and did not always conform to the clinical features and the lepromin test. The extremely unstable state of the host-parasite relationship was shown by the varying proportions of lepromatous and tuberculoid elements. Development of tuberculoid histology can be controlled favourably in subsequent biopsy specimens with the help of standard specific anti-leprosy drugs, and therefore the unstable state can be modified. On the contrary they found that the appearance of vacuolation (hydropic degeneration) in the giant cells, along with foamy changes in other cells, demonstrated an unstable state which leads to lepromatous changes. This comes about probably through repeated reactions or may be due to a low immune status of the individual host. They think that borderline patients, both clinically in leprosy and histologically, should be put into a separate group and should not be classed with reactional tuberculoid patients.