9046 P

Effect of "R" and "S" Forms of Chromogenic Acid-Fast Bacillus from Human Leprous Lesion on Rabbits.

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The writer isolated[1] a "rough" and "smooth" form of a chromogenic acid-fast bacillus which was recovered from the human leprous lesion. The 2 forms differed both morphologically and culturally. A study was made to determine any difference in pathogenicity. Inoculations of rabbits began about a year ago. Large doses of the 2 forms were given at frequent intervals over a considerable length of time. Three rabbits were respectively injected with the "R" form subcutaneously, intraäbdominally and intranasally, and 3 other animals received the "S" form by the same routes. Preliminary to the injections of living bacilli, all 6 rabbits received several injections of a lepra broth-filtrate to produce, if possible, an allergic condition which would enhance the growth of the acid-fast bacilli *in vivo*.[2]

The "S" form produced the most striking results. The rabbits became markedly emaciated after approximately 7 months. Several subcutaneous nodules were noted at the sites of inoculations in the rabbits receiving the subcutaneous injections. Microscopic examination of ulcerated nodules revealed many acid-fast bacilli. The internal organs, especially the liver, spleen and kidneys, showed many large phagocytic cells, simulating lepra cells, containing acid-fast bacilli. Fibrosis and generalized thickening of the blood vessels was marked. Two rabbits showed paralysis of 2 or more extremities which probably was the result of extra- and intraneural fibrosis. Less conspicuous changes were noted in the rabbits injected with the "R" form. Emaciation was present but not to the degree seen in the rabbits that had received the "S" injections. Subcutaneous nodules developed but gradually disappeared without ulceration. Careful microscopic examination of the internal organs of the "R" animals revealed nothing characteristic of leprosy. No acid-fast bacilli were detected in any of the organs.

One of the objects of this investigation was to determine whether it is possible to induce in rabbits, by means of the chromogenic acid-

1 Kriz, J. R., Proc. Soc. Exp. Biol. and Med., 1936, **34**, 303.

2 Duval, C. W., and Gurd, F. B., *J. Exp. Med.*, 1911, **14**, 181.

fast bacillus isolated from the human leprous nodule, a disease comparable to human leprosy. The other object was to determine any difference in the pathogenicity of the 2 variants designated "R" and "S". The data indicate that the smooth form of this chromogenic acid-fast bacillus is the more pathogenic for rabbits.

9047 P

Action of Acetylcholine on Heart and Skeletal Muscle.*

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Hall, Ettinger and Banting[1] found that long-continued administration of acetylcholine produced myocardial and coronary artery damage, the effects being more severe and extensive in old than in young animals. In pursuing our interests in the problem of myocardial and skeletal muscle disease in relation to the creatine reserve, we attempted to study the effects in the rat. As in the experiments reported from the Banting Institute, acetylcholine bromide (Eastman-Kodak) and acetylcholine iodide (Hoffmann-La Roche) were used. The dose was 10 mg. of acetylcholine daily, administered in a single dose or in 2 divided doses. The rats were 5-6 months old at the beginning of the experiments and the average weight exceeded 300 gm. Fourteen of the 17 rats on which the present report is based received the drug for a period of 85-90 days, at which time they were sacrificed.

Within a few seconds after each injection, the characteristic effects of the drug referable to autonomic activity, *i. e.*, profuse salivation and lacrimation, accelerated respiration and heart rate, were manifested. These symptoms gradually subsided during the succeeding 10 minutes.

Heart. The changes in the heart were somewhat variable, but in most animals there was present some degree of myocardial degeneration, hyaline change and beginning fibrosis. A striking feature

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1 Hall, G. E., Ettinger, G. H., and Banting, F. G., *Canad. Med. Assn. J.*, 1936, **34**, 9.