

peculiarly resistant nature of the cell membrane, thus giving rise to a more chronic type of inflammation with, as a result, a proliferation of the fixed connective tissue cells. This same explanation holds for the related organisms of the group which give rise to the so-called pseudotubercloses.

The bacillus of tuberculosis as found in human tissues presents considerable variation in virulence when isolated and tried on laboratory animals, but the variations in virulence does not always correspond to the degree of acuteness of the lesion from which the organism has been isolated, for instance from two very similar types of lymphadenitis bacilli of quite different virulence have been isolated. The subject of the virulence of the bovine variety for man is a question which is not yet settled, but there is quite as much evidence in favor of this variety being more virulent than the human form as for the contrary opinion expressed by Koch at the London Congress of Tuberculosis. In tuberculous lesions in man it is a remarkable fact that the bacilli are often met with most sparingly. In a tuberculous lymph gland, it sometimes requires a very careful search to find an occasional bacillus in a giant cell or in one of the epithelioid cells. The number of bacilli which we find in sputum are evidently due to multiplication in cavities and similar situations and it is very rare to find in man the enormous numbers of organisms which we commonly see in the tissues of experimentally infected animals. Recently in some experiments upon the production of inhalation tuberculosis in guinea pigs, one of Flügge's pupils met with a few caseating bronchial glands with very few bacilli, in certain of his animals. As he points out, these lesions probably more closely approach the ordinary conditions of inhalation infection in man, than the usual animal experiments show. This difficulty of demonstrating the bacilli in certain human lesions was used as an argument in favor of the formation of spores. But as pointed out above there is absolutely no evidence for the formation of spores and in every tuberculous lesion, careful search will reveal the bacilli even if few in numbers. It may be that the methods of fixation of the tissues may have some influence upon the staining of the bacilli *in situ* but all our knowledge of the organism seems to point to the ability of comparatively few individuals setting relatively severe pathological changes

In the etiology of the different forms of tuberculosis, the presence of other bacteria plays an exceedingly important part. Clinicians have long been convinced that except where large numbers of virulent bacilli invade the tissues, as in miliary tuberculosis, tuberculous meningitis or caseous pneumonia, the pure tuberculous process is one which tends towards recovery and consequently is readily treated. But where other organisms