

by an acid e.g. 3 per cent. hydrochloric acid and alcohol, and these other forms share this peculiarity, so that the ordinary test will not serve for their differentiation. This is true for the acid decolorizers ordinarily used but the real bacillus tuberculosis is the only one that in the experience of the investigators will resist the action of 25 per cent. aqueous solution of nitric acid—the original decolorizer used in the Koch-Ehrlich process. In process of growth these spurious forms develop often in much less time than the true, while the character of their growth is quite distinct but yet differs more in degree than in kind.

The effect of these forms on animals after injection, differs considerably, in many cases no effect is apparent in others inflammatory and purulent aggregations of tissue are found. In the experiments made in this investigation three forms were used the " Butter Bacillus " " Grass Bacillus II." and " Timothy Hay Bacillus " and experiments were made upon small animals—rabbits—and upon larger domestic animals—calves and hogs, forty-five rabbits, four hogs, and fifteen calves, in all being used. A series of experiments was also made, to determine the frequency of such micro-organisms in dairy butter, fifty samples being taken and tested by subcutaneous or peritoneal injection in guinea pigs. Space forbids a complete analysis of the results obtained but the conclusions derived are summarised as follows.—

(1) Some of the acid-resisting bacteria are capable of causing in rabbits and guinea-pigs nodular lesions suggestive of tubercles; that these lesions, while very often like tubercles in their histological structure, may nevertheless usually be distinguished from them by the following peculiarities :

(a) When occurring as a result of intravenous inoculation, they are always seen in the kidneys, only occasionally in the lungs, and practically not at all in other organs.

(b) They constitute a localised lesion having no tendency to dissemination, metastasis, or progressive destruction of tissue by caseation.

(c) They tend to terminate in suppuration or organization rather than in progressive caseation, as is the case with true tubercles.

(d) They are more commonly and conspicuously marked by the actinomycetes type of development of the organisms than is the case with true tubercles, and these actinomycetes are less resistant to decolorization by strong acid solutions than are those occasionally seen in tubercles.

(3) That by subcutaneous, intravenous and intrapulmonary inoculation of hogs and calves, the typical members of the acid-resisting group are incapable of causing lesions in any way suggestive of those