

positive in favour of actinomycosis, for in tuberculosis such a thing does not occur.

The final demonstration of the nature of any given case would be made by the discovery of the Ray fungus in the granulation tissue or in the discharge. In the case of sputum or pus we look for the so-called "sulphur grains," which are the fungus itself. It is often necessary to hunt over quite a large amount of material, and even then the grains may not be found. By spreading the pus on a plate of glass and examining it on a black background the process is facilitated. In default of finding the "grains," long threads should be searched for. In tissues the actinomyces are often scanty. In the case I worked at the diagnosis was for a long time obscure, until a great number of sections had been made. The fungi stain by hæmatoxylin, but the best stain is Gram. Owing to the great number of related forms among these fungi, it is advisable, where possible, to make cultures of the organism. Cultures of the actinomyces bovis differ in certain particulars from the others, the most important being the difficulty of growing it in the presence of oxygen. Again, inoculation experiments are of the greatest value. Most of the fungi I have mentioned produce the lesions of pseudo-tuberculosis in the ordinary laboratory animals, while the actinomyces bovis produces no gross disease.

CLINICAL BACTERIOLOGY OF ACTINOMYCOSIS.

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I can hardly agree with the statement that the disease is a rare one here as compared with other countries. It is rather, in my opinion, that only in recent years have we been on the lookout for it; and I fancy that many surgeons have, time and again, come across obscure conditions, which, undoubtedly, with our fuller knowledge, would have proved to be actinomycotic. That the disease is not infrequent is sufficiently proven by the series of cases reported here by Dr. Bell to-night, drawn, as they are, from a population which is sparse as compared with that of Europe. Indeed, it was a favourite remark of Von Mikulicz at his clinic that the diagnosis of no obscure abdominal condition should be made until the possibility of actinomycosis had been considered.

My own experience with the condition began four years ago in Ponfick's laboratory (Breslau), where I had the opportunity of studying two cases which had come to autopsy. Although interesting in many particulars, they were chiefly so to me as illustrating in a striking way the two modes in which the organism spreads—by contiguity and by the