

2. In not one of the animals was the disease generalized or very extensive. In only four out of the ten was there pulmonary tuberculosis. In nine out of the ten, however, there was distinct evidence of the disease in the peribronchial and peritracheal lymph glands, indicating infection through the respiratory tract. In one, the only positive sign of active disease found was the presence of tubercular ulcers in the small intestines. In not one, despite most careful examination, could tubercles be detected in the mammary glands, although in Cow No. 1 (the animal presenting a more extensive tuberculosis than did any of the other animals) tubercles were discovered in the supra-mammary lymph glands. In three animals the disease appeared to be confined to the peribronchial glands, being found there in a latent condition. It would in fact be difficult to have a smaller amount of tuberculosis present than was found in these three.

3. Clearly therefore, as noted by previous observers, the first injection of tuberculin is capable of detecting the slightest degree of infection in cattle.

4. We confirm the observations of previous workers in finding that one injection of tuberculin in cows seriously affects the development of the reaction within the next few weeks. This inhibitory effect may last for considerably over thirty days. But in one case we obtained a well marked reaction within thirty days.

5. It would seem from our observations that a second reaction is not more easily obtained within thirty days by doubling or quadrupling the dose of tuberculin. Herein the cow would seem to differ from man.

6. It is not to be left out of account that possibly, repeated doses of tuberculin, in animals slightly affected, have a certain curative power. In this way, may, possibly, be explained the singularly slight evidences of the disease found in certain of the animals, more especially in those subjected to repeated large doses.

7. While thus these tuberculous animals were free from tubercular disease of the udders, the milk of several contained from time to time tubercle bacilli. The only satisfactory explanation of their presence is that the mammary gland possesses the power of removing pathogenic organisms from the blood and lymph and of excreting them in a condition of lessened virulence;

8. That the bacilli discovered by us in the milk were truly tubercle bacilli is supported by the following facts:—

(a.) The bacilli were found in greatest number and most frequently in the milk of those animals which, as shown by the autopsy, presented the most extensive evidence of the disease.

(b.) Two guinea-pigs and one rabbit inoculated with such milk died of generalised tuberculosis.

(c.) The staining reactions of the bacilli were those peculiar to the Tubercle bacilli.

(9.) On the other hand, it is clear that the milk of animals suffering from these slight grades of tuberculosis, and free from tubercular disease of the mammary glands in general possesses very feeble infective powers.

(a.) When the milk was injected in large quantities into the abdominal cavity of that most susceptible animal, the guinea-pig, *i. e.* when the most favourable method is employed to reproduce the disease, out of 44 guinea-pigs thus inoculated only two succumbed to the disease. Of 42 rabbits similarly inoculated only one became infected.

(b.) Young calves fed entirely upon the milk of these infected cows over a period of several months remained wholly free from the disease, did not react to the tuberculin test and upon post mortem examination showed not the faintest trace of tuberculosis despite most careful search.

10. But, as shown by a study of the milk, *occasionally without obvious cause the number of bacilli present in it might increase greatly* and in one case the number suddenly became so great that the milk must have been at this period a most dangerous food stuff.

11. Throughout the whole period during which these cows were under observation only one—and that one only at the beginning—gave strong clinical evidence of the existence of the disease.