



## GOSSIP

### BOVINE TUBERCULOSIS

So much has been said and written the last fifteen years or more about bovine tuberculosis, and its relation to disease in man, with still no satisfactory conclusions reached, that it is not possible, without more definite data, to say or write anything not already discussed. At the same time, the subject is of such vital importance that we may be excused for touching it again. That the disease is very common in both cattle and man, is an established fact, but the relation one bears to the other has not yet been satisfactorily determined. The symptoms of bovine tuberculosis are so insidious that the disease may exist, and in very, very many cases does exist, without causing the slightest symptoms that would lead any person to suspect it. As any organ is liable to be the seat of the disease, and as the disease is usually slow in developing, and no clinical symptoms will be shown until the organ or organs involved are diseased to such an extent as to interfere materially with their functions, it can readily be understood that an animal may be extensively diseased without showing any symptoms to cause suspicion. The most common form of the disease in cattle is pulmonary tuberculosis, and this form more quickly causes suspicious symptoms than when other organs are attacked. When the glands of the throat or the lung substance are the seat of the disease, a dry, hacking cough is frequently heard, but in other respects the animal appears to be perfectly healthy. This stage of the disease may exist for months or years, but at any time the progress of the disease

may become more rapid; the frequency and hacking character of the cough become more marked, the animal becomes unthrifty, and gradually pines away, until death occurs. It must not be assumed that every animal that coughs occasionally is tubercular, but we are quite justified in suspecting the disease in an animal that coughs frequently, or, I might say, occasionally, without showing any symptoms of physical derangement. The liver is frequently diseased, but no suspicious symptoms will be noticed until the organ is so extensively diseased that its functions are materially interfered with when digestive derangement will be noticed. Digestion under these circumstances is generally irregular. Periods of semi or acute diarrhea are alternated with periods of semi-constipation; repeated attacks (without apparent cause) of bloating, or impaction of the rumen, are noticed. These attacks will generally yield to treatment, only to reappear, with like or more violent symptoms, which may or may not yield to treatment, until eventually a fatal attack will occur. Any of the digestive glands or any portion of the digestive tract, may be the seat of the disease, but the same remarks apply, viz. "no suspicious symptoms will be noticed until the organ is sufficiently diseased to materially interfere with its functions." The urinary or the genital organs, while probably not so frequently diseased as others, are liable to an attack, and disease of the latter is without doubt the cause of sterility in many females and doubtless, sometimes, also in males.

So far as danger to the human family is concerned, tubercular disease of the udder of the cow is probably the greatest. This organ is, fortunately, not so frequently involved as some others. At the same time, it is not by any means exempt, and in many cases no symptoms are shown to lead a person to suspect

its presence. Repeated attacks of inflammation of one or more quarters of the udder, attacks which usually yield more or less readily to treatment, only to reappear in a variable time, without appreciable cause, must always be looked upon as very suspicious. Usually, after a few attacks, and not infrequently after one, the udder does not regain quite its normal condition, but a portion becomes indurated (enlarged and hardened). This at first does not cause a noticeable alteration in either the amount or quality of the milk, but as the induration increases, the quarter (or quarters) involved becomes more or less inactive, and the supply of milk becomes lessened, and in some cases entirely suspended; while, in other cases, suppuration is set up, pus, instead of milk, is drawn from the teat or teats, and in some cases abscess after abscess, which abscesses often refuse to yield to treatment, are formed. In the meantime, the portions of the udder not involved yield a normal quantity of milk, of apparently normal quality, and the general health of the animal is not apparently much affected. Doubtless, in many cases, tubercular disease of the udder does not cause the above symptoms, or any symptoms, to indicate that such disease exists. It is also supposed to be possible for a cow to have a diseased udder, and at the same time yield non-infected milk, but we are probably justified in assuming that the bacilli of the disease generally are present in the milk of a diseased udder. It is also claimed that the bacilli have been discovered in the milk of a tubercular cow whose udder is healthy, but this seldom occurs. At the same time, the danger exists.

In addition to the organs named, and other organs, as even the brain and spinal cord, in which tubercular deposits are found, we not infrequently observe what is called muscular tuberculosis, in which the nodules are located

in the muscles or in the areolar tissue under the skin. These nodules are often noticed on the legs of cattle, and cause practically no inconvenience. The only method of diagnosing the disease in cases where clinical symptoms are not well marked is by the tuberculin test, details for which have frequently been published, but it may not be unwise to report. Tuberculin is a product of the bacilli of the disease, in which the life of all bacilli has been destroyed. At the same time, when this product gains the circulation of an animal in which tubercular bacilli exist, it causes constitutional disturbance, which produces a marked increase of temperature, called a "reaction." The pure tuberculin is diluted with about 9 parts of a 1 per cent. carbolic acid solution, in distilled water before it is ready for use. This, of course, makes a 10 per cent. solution of tuberculin. The cattle to be tested should be treated as usual, so far as ordinary care and feeding, etc., are concerned. Their temperatures should be taken occasionally before the tuberculin is injected, at least three times, say at 2 p. m., 5 p. m. and 8 p. m. Then the seat of injection (usually the loose skin just behind the shoulderblade, but in makes little difference where, except for convenience) is disinfected with, say, a 5 per cent. solution of creolin, and then, with a hypodermic syringe, which has also thoroughly disinfected with a like solution, the dilute tuberculin is injected. For an ordinary sized cow, 60 drops is the dose, the dose to be regulated accordingly, if the animal be young, or small, or above the usual size. At the same time, experienced teachers us that the amount of tuberculin injected has little effect upon the result. A large dose will probably cause an earlier reaction, but a very small dose will just as surely cause the reaction in a diseased animal. After

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