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ACTINOMYCOSIS AND THE IODIDE TREATMENT.

BY W. B. NILES.

This article is not written for the purpose of stating anything new concerning this subject, but for the purpose of recording our observations and more extensively circulating among the cattle owners of the state the knowledge that a majority of cases of "lumpy jaw" can be successfully treated by giving internally for some time the drug known as Potassium Iodide.

The very frequent occurrence of this disease in the west, coupled with the fact that many animals so affected are unfit for human food and are consequently condemned when sent to market makes this question a very important one.

In regard to its frequency it may be said that in our opinion it is much more frequent than is generally supposed. I believe that almost every one, if not all, of the bunches and abscesses appearing about the head of cattle are due to the same cause—the *Actinomyces* fungus. My observations of this trouble began in 1885 when I succeeded in finding the fungus in a tumor removed from a cow at the veterinary department of the Iowa Agricultural college, this being the first time it had been recognized west of Chicago. Since that time I have repeatedly examined specimens of tissue and pus from growths of this kind and have not in a single case failed to find the fungus. Specimens sent here from Colorado by a former graduate of the veterinary department, and from different parts of Iowa, have proven in every instance when carefully examined to be Actinomycotic growths.

The question as to whether or not cattle affected with this trouble in any form are fit for food, has of late been extensively discussed, and it is not within our province to discuss it here

It may be said, however, that as most people have a tendency to discard for food all animals not perfectly healthy and sound in every way, that these cases are not sought after by the local butchers, and are consequently of little value whether actually fit for food or not. From a medico-scientific standpoint it may be said that as the disease is due to a fungus, which may develop in some of the vital organs, as well as in a local region, and thus affect the general health, and can also be communicated from one animal to another by inoculation, as has been shown by experiments performed here and elsewhere, that at least some of these animals are unfit for food. The generally accepted opinion now is that if the animal is in good condition, the disease entirely confined to the region of the head, and the lesion small, it is suitable for food; but on the other hand, if the tumor be large and suppurating extensively, or the animal be thin in flesh and the lungs or other vital organ affected, as is quite often the case, it is not fit for food. In short, we would say that every case should be examined by a competent veterinary inspector who alone is competent to tell whether or not the carcass should be used for food.

From the foregoing it will readily be seen that in order to remove all doubts and prevent loss of what would otherwise be a valuable animal, a cure for the disease is very necessary.

Two methods of treatment are in vogue (*a*) surgical treatment, consisting of lancing of abscesses, removal of the tumor, or application of absorbents over the bunch; and (*b*) medicinal treatment, consisting of giving internally Potassium Iodide. Surgical treatment is successful in some cases. If all diseased tissue can be gotten at and removed, the case will make a good recovery. In many cases this can not be done; the tumors are multiple and so situated that they cannot be reached with the knife. Surgical treatment can only be successfully carried out by the veterinary surgeon.

The medicinal treatment, now largely resorted to, consists of administering for some time Potassium Iodide. This treatment was first tried in Europe. It was shown that Actinomycosis of the tongue (the form most often seen there) could be cured in this way. In this country it was first tried in the spring of 1892 by Dr. Norgaard, an inspector for the Bureau of

Animal industry at Chicago. He treated a steer with a large tumor on the jaw, with complete success. In the fall of this year Dr. Norgaard selected for treatment eighty-five head of cattle ranging from the mild case to most severe one. These were treated for some time and then slaughtered, and a careful post mortem examination made. The result showed eighty per cent of the number cured. This was an exceedingly good showing, as many of the cases were the worst that could be secured.

Last year opportunity offered for trying the remedy at this station. One of the station steers which was being fed in an experiment, developed Actinomycosis in quite a bad form. A small tumor appeared on the side of the face, one in the nasal passage, and a large one beneath the lower jaw. This animal received Potassium Iodide in about two drachm doses, twice daily for about ten days. After about one week's intermission the medicine was given again the same as before. The tumors began to shrink soon after beginning the administration of the drug and the process of absorption went on until all had disappeared, except the large one under the jaw. This still showed as a slight thickening. The animal was considered cured and passed at the Union stock yards, Chicago, as a sound animal. Since treating this case I have prescribed the remedy for several other affected animals without one failure to my knowledge.

Taking into consideration the experience of others and our own I do not hesitate to say that this treatment, if properly carried out, will cure a majority of cases of Actinomycosis or "lumpy jaw." Cases which cannot be successfully treated are usually those in which the bone is badly involved.

SIZE OF DOSE AND HOW ADMINISTERED.

The size of the dose depends upon the size of the patient. For a medium sized animal the dose is from two to three drams once a day. If given twice daily, smaller doses are sufficient. Dr. Norgaard states that the dose should never be more than one-fourth dram for every hundred pounds of live weight. After giving full doses for from six to ten days symptoms of Iodism will be shown; these are discharge of

water from the eyes, flow of mucous from the nose, and peeling off of the superficial layer of the skin over the body. When these symptoms are observed the medicine should be stopped for three or four days and then given again. Cases which show these symptoms plainly seem to recover most rapidly. The treatment should be kept up at intervals for about six weeks, or until the animal has sufficiently improved to warrant its being discontinued. After the bunch has shrank to one third its original size the drug may be discontinued, as absorption will go on and the bunch disappear without further treatment.

The medicine is best administered dissolved in a small amount of water as a drench, or dissolved in the drinking water. As cattle are easily drenched, a convenient way is to dissolve the dose in about a pint of water and drench by using a long necked bottle. If given in the drinking water the amount of water should not be too great and the animal sufficiently thirsty to drink the entire amount. This treatment is thought by some to be expensive, but if the value of the animal before treatment be compared with that after a cure has been effected it will readily be seen that the owner can well afford treatment. It is seldom that more than one pound of the drug is necessary and often not more than one half pound is used. As the drug does not cost to exceed \$3.50 or \$4.00 per pound the cost should not prevent its use.

Since the foregoing was written I have received report of several cures, one man writing that he had cured two steers by giving one pound to each.