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THE BANG METHOD OF HANDLING TUBERCULOUS HERDS*

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A System whereby Healthy Stock is Raised from Re-acting Animals - It Has Proved Successful in Denmark and is Being Adopted in Connection with Some Canadian and American Herds - Of Much Concern to Dairymen.

A MOST interesting pamphlet has been published by the University of Illinois entitled "Studies on Animal Tuberculosis." It contains a full report of an address by Professor Bernhard Bang, M.D., of Copenhagen, delivered at the International Convention on Tuberculosis at Washington, D. C., and gives a very clear idea of the views held by this distinguished authority, and the methods he has devised for eradicating bovine tuberculosis in Denmark.

The question of bovine tuberculosis is one of grave importance in every stock-raising country. Among stockmen probably the breeders of dairy cattle are the most vitally interested in the matter, but every consumer of milk has something at stake, so that there are few people in the Province of Ontario to whom the question does not appeal.

A CONTAGIOUS DISEASE.

Professor Bang works upon the principle that bovine tuberculosis is a contagious disease, and that healthy animals placed in a stable with diseased animals, are liable to infection, sooner or later. The point scarcely admits of controversy, as it has been demonstrated in many instances, as clearly as it is possible to demonstrate matters of this kind. As a rule, calves are born healthy, but if the uterus of the cow is affected, the calf may be tuberculous at birth. Such cases, however, are rare. Milk is a common means of carrying infection. If the udder is tuberculous, the milk will likely contain the germs when drawn, but milk from a healthy cow, drawn in a stable where there are diseased animals, is liable to contamination from particles of filth which are almost sure to find their way into the milk, and which may contain large numbers of tubercle bacilli.

The tuberculin test gives no information regarding the location of the disease, nor the progress which it has made, and post-mortem examinations prove that most animals which react, but which do not show clinical symptoms, are only slightly affected; many of them so slightly that they might live for years, and, in some cases, recover.

INDISCRIMINATE SLAUGHTER A MISTAKE.

From these facts, Professor Bang reasoned that the indiscriminate slaughter of reacting animals was a mistake. Cows which reacted, but which showed no clinical symptoms, would likely produce healthy calves and should be retained for breeding purposes. Only those showing clinical symptoms should be slaughtered.

But a cow might not show clinical symptoms and might still be a menace to other animals confined in the same stable, and the only way to avoid this danger is to separate those animals

which react from those which do not. Bang's system, therefore, calls for complete isolation of reacting animals. Calves born in the infected herd are removed immediately to separate quarters, and are fed upon milk from healthy cows, or milk which has been heated to 80 deg. C. to destroy disease germs. For the first day of the calf's life it is fed the mother's milk raw, the colostrum being important to the welfare of the calf, but after the first day it is fed only the milk of healthy cows, or sterilized milk. Where practicable, there should be two sets of attendants, and the two herds should have nothing in common, separate implements and utensils being employed for each herd, and the herds should be kept separate when turned out to pasture. When it is not possible to have different attendants, then the herdsman should always tend and milk the healthy animals first, and put on special

Condensed Reading Matter

Farm and Dairy is the best paper I know of for putting its reading matter in a condensed form. Farmers have not time to read two or three columns to get one or two ideas.—D. N. Anderson, Lambton Co., Ont.

overalls and boots before attending to the diseased herd. Instead of changing boots, a pair of rubbers could be worn over the ordinary boots when in the infected stable.

SECURING ISOLATION.

The most effective isolation can be had when the two herds are kept upon different farms. Next in effectiveness would be separate stables, but if neither of these methods is feasible, the stable may be divided by a tight board partition, with a tight fitting door. It would be better to have no door in the partition, provided it is practicable to have an entrance to each stable from outside. The tuberculin test is applied twice a year, or at least once a year, to the non-reacting part of the herd, and any reacting animals are removed to the infected herd.

In 1902, Professor Bang received a grant from the Danish Government to enable him to test his method on a highly tuberculous herd. Upon the first application of the test, 131 animals reacted, and only 77 failed to react. Most of those which failed to react were young animals. The stable was divided by a solid wooden partition, the reacting animals being placed in the other. Two sets of stable hands were employed, and the cattle were kept separate when grazing as well as in the stable. Nearly all the calves born in the

infected division were found to be healthy at birth. They were removed at once from the infected stable and fed the first day upon the mother's milk raw, after which they were fed sterilized milk.

The "healthy" division was tuberculin tested every six months, and for a number of years a few reactions were obtained. Generally the percentage of reaction was very low, but on a few occasions, it was as high as nine per cent. The slowness of the operation is accounted for on the ground that the farmer who owned the herd was not so careful as he might have been. Gradually, however, the numbers of healthy animals increased, and the animals of the reacting division were gradually disposed of until none of them were left. The farm now supplies "Milk for Infants" to the city of Copenhagen. The animals are tested every year, and under the last test, which was in 1907, not one out of 211 animals reacted.

The Bang system has been adopted on a great many farms in Denmark, and though a considerable number of breeders have abandoned it from one cause or another, those who have persevered have almost invariably obtained gratifying results. A few notable instances may be cited as examples.

SOME NOTABLE INSTANCES OF SUCCESS.

On one estate in 1894, 139 animals reacted, and 86 failed to react. In 1908, only one calf reacted, and that so slightly as to be regarded as doubtful. On another estate, in 1895, the test showed 271 diseased and only 68 healthy animals. At present, only 10 animals remain in the reacting division and only six out of 373 animals reacted under the last test. On another estate, in 1895, 115 animals reacted, and 48 did not react. Under the last test only two out of 158 reacted. On still another estate, in 1896, 166 animals reacted and 74 were found healthy. There is now a stock of 264 cattle, only three of which reacted in 1908. It is worthy of note that in this herd, one of the half-yearly tests showed 22 per cent. of reactions. This was very discouraging, but, fortunately the owner persevered, with the success already noted. In many other herds, large and small, equally satisfactory results have been obtained, so that the efficiency of Bang's system has been very fully demonstrated, when the person who undertook it exercised great care, and possessed the necessary patience.

A MODIFICATION OF THE SYSTEM.

Professor Bang also suggests a modification of the method which has been described. In cases where the owner has reason to suspect that a very large proportion of his herd would react to the test, he might prefer not to have his herd tested. In such a case he could isolate the calves and feed them sterilized milk. The young herd thus evolved would be tested every six or 12 months, and a new herd of healthy animals built up. This plan has been adopted upon a number of Danish farms, and has given most satisfactory results.

The Danish Government makes an annual grant

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