

## Suggestions Anent the Control of Tuberculosis.

EDITOR "THE FARMER'S ADVOCATE"

The problem of tuberculosis control affords two chief fields for operation. The first is one of dissemination, the prevention of disease communication from herd to herd, from community to community, it may be from province to province or from country to country. The second is eradication within the herd. The adoption and application of effective measures in these two fields depends upon two agencies, education and legislation. Both of these agencies have been at work in Canada for some years and there could be no more opportune time than this critical period in the country's live stock development to reconsider our methods and analyze our results.

Nothingman who is at all familiar with the situation will deny that a complete solution of the problem in either field is not an easy matter. It is doubtful, however, if any such man would care to admit that much cannot be done. The question of the moment I take it is, what progress is being made and can anything practicable be suggested to accelerate it? Destructive criticism is not called for, but a frank discussion by those who are trying to follow the situation, from certain angles at any rate, may prove at least suggestive for further work.

In my opinion something is being accomplished through the above two agencies, but as operated thus far they have not proved adequate to cope with the disease. I regard the present time as especially critical because of the unprecedented possibility for Canadian live stock development, the consequent demand, and the fact that, with dairy cattle especially, changing conditions to closer housing, heavier feeding, and harder work tend to increase the ravages of the disease. No statistics are available which definitely state the case, but information very indicative of its seriousness is available.

Education is urgently needed if for no other purpose than to pave the way for legislative measures. Ignorance explains the present dread and suspicion of tuberculin testing. It is a fact that comparatively few realize how their whole business and even family health may be undermined by diseased cattle. It is also a fact that not one per cent. of the cattle offered for public or private sale are tested. Man after man will buy, breeder after breeder will buy, pay high prices and never ask about test, much less exact it. If any further proof of the apathy toward tuberculosis and the ineffectiveness of education thus far be required, numerous illustrations can be given. Suffice it to mention one more. Very few farmers and certainly not all breeders ever notice the Government punch in a cow's ear or know what it means when they do see it.

For years we have heard people say "educate". At best it may be a slow process but it may well be asked if something more aggressive cannot be instituted. Would it not be possible to initiate a special movement in which federal authorities, provincial authorities college authorities, and the agricultural press, through their veterinary and live stock representatives, might all share with some activity? Various steps in connection with any such educational propaganda would suggest themselves.

In literature alone, there would seem possibility. Special material, not in bulletin form, including simple, practicable, effective methods for dealing with a given infection should be carefully prepared by live stock and veterinary authorities conjointly and distributed periodically and on special occasions. Co-operation and agreement may well be expected from those who count on it from others.

Legislation for some time to come cannot be drastic. Nevertheless it is necessary in more effective form than we have it at present, and it would seem that it might gradually increase its footholds. Undoubtedly those in whose immediate hands it rests are in the best position to judge and have found themselves compelled to go slowly. At long range, however, possibility of and need for certain measures would seem apparent.

It seems regrettable that one source of not only disease dissemination but actual introduction has been through imported stock. There are, no doubt, difficulties in the way of preventing this but the matter is too serious to be dismissed for all time to come as an in-urmountable obstacle. The possibilities of this source as a fountain head need not be discussed. The moral effect alone in officially sanctioning the distribution of infected stock does not help matters educational. This is a phase of the problem on which the most careful thought should be centred until some improvement on the present system can be worked out.

By-products afford an open channel for disease. I believe education has already gone far enough to allow legislation to show itself here in compelling pasteurization of all skim milk and whey from creameries and factories. The practicability of such a measure is already a settled thing.

Milk supply of towns and cities is another point of attack in which regulation and assistance should do much directly and indirectly to bring home to the individual the importance of, and procedure in dealing with tuberculosis.

Given lines of action cannot be dogmatically stated for the above and other matters such as official testing, compensation for losses, tuberculin standardization and control. Effort has already been made in many of these channels to some good purpose, but from the standpoint of one somewhat in touch with the live stock situation I take this opportunity of emphasizing need for more aggressive education and further legislation, and I would like to see the whole subject gone into

again more thoroughly than ever by our live stock and veterinary authorities with the object of designing added measures and arranging for their prosecution. Macdonald College, Que. H. BARTON.

## Experiments With Vaccine and Serums in Contagious Abortion.

EDITOR "THE FARMER'S ADVOCATE":

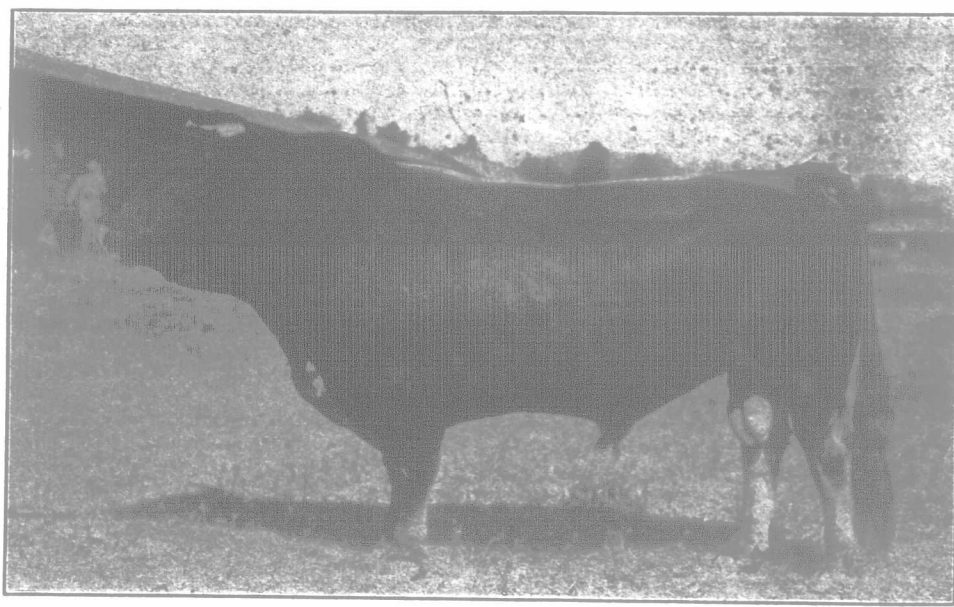
The experiments which we have been making in the Health of Animals Branch of the Department of Agriculture, with the object of finding a means of controlling contagious abortion in cattle, have resulted hitherto successfully, and I am permitted by the Minister, the Honorable Martin Burrell, to make them public.

EXPERIMENT I.—Four heifers, aged 1 year, were inoculated with our protective vaccine January 26, 1915. The test of the blood of these heifers showed that one of them was already infected with the bacillus of contagious abortion, and all four were living in a herd in which the disease was known to exist.

The four heifers were bred on the following dates: April 21, April 23, April 23, and December 18, 1915. They all calved, the dates being respectively January 26, January 26, January 12 and September 11, 1916.

EXPERIMENT II.—Ten yearling heifers were inoculated March 20, 1915, four of which reacted to the test for contagious abortion. They were bred after an interval of about three months. (Accurate dates cannot be given in this case, as the herd records were destroyed by fire). All became pregnant; eight carried their calves to full term and produced living offspring; two aborted.

EXPERIMENT III.—Four heifers, yearlings, were employed to test a method of employing a serum as well as a vaccine. With the first two, the serum and vaccine were used simultaneously; with the second two, the serum was given ten days prior to the vaccine. When tested the first two had reacted to the test; the second two did not react. The first two were bred December 16, 1915, and August 25, 1915, and both aborted July 12, 1916 and April 16, 1916. The second two were



Tom Phylis.

Celebrated Brown Swiss bull, calved Sept. 10, 1903. Despite his years he is still active and vigorous.

bred December 23, 1915 and November 9, 1915, and produced living calves September 20, 1916 and August 5, 1916. This experiment was unsatisfactory and gave conflicting results, but shows that the simultaneous method of giving serum and vaccine did not prevent infected heifers from aborting.

EXPERIMENT IV.—In this experiment an effort was made to find out how far the vaccine treatment would prevent abortion in cows which had previously aborted.

Eight cows were selected, ranging from two to seven years in age. All had previously aborted, one of them three times, the others once. All but one reacted to the test for contagious abortion. None were pregnant when inoculated nor bred afterwards until some weeks had elapsed. The result showed six cows produced living calves at full term; one cow proved to be barren and was slaughtered; and one cow reacted when the herd was tested with tuberculin and was slaughtered, having previously aborted.

The method used in this experiment was a double inoculation with a mild vaccine first, followed by a strong vaccine several days later.

EXPERIMENT V.—Four cows, aged two to seven years, and four yearling heifers were used. The cows had all aborted previously, one of them twice, the others once. Three of them reacted to the test for contagious abortion. All were treated by the double method, and were bred after a suitable interval with the following result: one of the cows, the one that had aborted twice previously, aborted again. All the others produced living calves.

These experiments have resulted in obtaining 27 living calves from 34 cows and heifers in badly infected herds. This encourages us to hope that we have a really useful method of producing immunity to the disease, and we are anxious to enlarge our experience by extending our work to other herds.

With this object, we now offer to treat free of charge a limited number of herds in which contagious abortion is present. Owners are requested to make application in writing to the Veterinary Director General, Ottawa, stating the number of breeding females in the herd. Applications will be dealt with in the order of their receipt.

F. TORRANCE, Veterinary Director General.

## THE FARM.

### A Summer Snow-Storm.

EDITOR "THE FARMER'S ADVOCATE":

Eight inches of snow in the middle of May! Wag your heads, ye wisecracks. Shiver and sermonize on the limitations of latitude beyond the balmy forty-fifth, forty-eighth, or fiftieth parallel beneath which we respectively happen to abide. Let Old Mr. "I-Told-You-So" have full satisfaction before he finishes this paragraph and runs into the next.

But hold! Let us prolong his pleasure and augment it with a few further bald statements. Let us gratify his pessimistic pride of opinion with some icy facts. Listen. Not only was there eight inches of snow on the ground but much more than that total fell in the twenty-four hours during which it occurred. Moreover, the snow was so soft and soggy that a canful of it melted into a good half can of water. Also it froze a skim of ice on two successive nights after the storm; and, worse yet, the soft, white mantle covered the fields in some localities for two full days and stray remnants of drifts could be seen in sheltered nooks and on the mountain tops for several days longer. And still we are not ashamed to publish the truth. Nay, verily, we proclaim it with joy and pleasure. For by all precedent that mid-May snow should be worth hundreds of thousands of dollars to the country. Jim Cornwall was right when he remarked that there is nothing more welcome to an Alberta farmer than a May snow-storm.

On the Eastern slope of the Rockies, spring is inclined to be dry until the season of the June rains. Given the moisture there is no difficulty in producing heavy crops of grain especially oats, and there is no more acceptable form in which this moisture can come than a nice soft snow after the grain is in the ground. Its melting saturates the soil and subsoil better, we think, than an equal precipitation of rain, thus going far to ensure good crops of grain and hay, not to mention pasture.

Even garden stuff withstands a good deal of such weather and while I shuddered to think what would happen to an apple orchard in bloom at that season it was reassuring to find that the half hundred or so of young apple trees set out in the experimental plantation a year ago sustained no perceptible injury. By the way, it is gratifying to note that almost every one survived the exceptionally hard winter just passed with nothing worse than a little tip injury. To be sure, they were protected by snow banks and building paper wrapped around them in the autumn, but even so, their present promise would give Mr. Wisecrack a rather rude jolt. Currants were injured scarcely at all, while among ornamentals, the spiraeas and lilacs of various species are coming on nicely. So much to get even with the pessimists.

It was quite a surprise the way that snow overwhelmed us. Changing at mid-day from a two-hours' drizzle, it fell in thick watery flakes until a little past the next noon, when it reverted to rain for a few hours. Still more remarkable was the way it lingered under the high May sun of this North-Temperate zone. Stockmen with calves and foals on the range and with no feed to give them—for supplies were scant last winter—felt a little apprehensive but it was almost impossible to find the animals in the storm. Some of ours came home and stood on the road in front of the buildings, whither I "packed" feed to them, tramping through the soggiest mass of snow I ever tried to wade. A few miles of it would tire a man out. The poor brutes looked gaunt enough though it was remarkable how well the calves stood it—better than the mothers which suckled them, by far. So far I have heard of no losses.

Reminiscences of other years were prompted. I am not sure of dates but think it was about nine years ago that a more severe storm than this one visited the ranching districts of Southern Alberta on about the same day of the month. A great many Southern or Eastern cattle had been brought in and got scattered before they could be branded. Unaccustomed as they were to rustle, terrible suffering was sustained and losses

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