

## **Koch Investigation Concluded**

### **PROVINCE OF BRITISH COLUMBIA:**

### **Reprints from Department of Agriculture Reports for 1946 and 1947**

#### Page 24 of the 1946 Report

Since the close of the Government's Koch Treatment Investigation, which was reported on pages 20 to 25 of the Fortieth Annual Report of the Department of Agriculture, it appears that a considerable number of veterinarians within this Province are using the Koch (Glyoxylide) Treatment with satisfactory results. The recent reduction in cost of the Glyoxylide has enabled many dairy-cattle owners to subject their whole herds to the Treatment.

During the season of 1946 a fair-sized herd on Vancouver Island was losing young heifers at the time of first calving. The trouble was diagnosed as Johne's disease, and a concentration of infection was found in this isolated herd that had sustained many losses; however, for a period of some few months there were no deaths in the herd, then four cases broke out in rapid succession during the spring. This trouble was brought to the attention of Dr. W. R. Gunn, Live Stock Commissioner, who, at the request of the owner, inoculated all animals in the herd and one week later re-inoculated the four animals, which showed clinical symptoms of Johne's disease, using the Koch Treatment. The suffering of the animals with the scouring was stopped immediately, and the herd has continued to make steady improvement ever since. However, this herd is being watched with a view to ascertaining what the condition may be in the coming spring. The general tone of the herd has been greatly improved.

#### Pages 14 to 16 of the 1947 Report

In the summer of 1944 the Department learned that the use of the Koch Glyoxylide in the treatment of dairy herds around the Chilliwack area, affected with mastitis, had been followed by results which were so good that an important development in 'the control of the disease by the use of this new Treatment seemed probable.' Upon this being brought to the attention of the then Minister, he requested that Dr. D. H. Arnott, of London, Ont., from whom the material had been obtained, be asked to provide the Department with the fullest possible information. Dr. Arnott supplied copies of the books published by Dr. Koch and the five pamphlets, which he himself had written on the use of the Koch Treatment on farm animals.

After careful study of the literature the Minister decided that an entirely new approach to the study of disease and its Treatment had been disclosed, and in response to an invitation extended to him by the Minister, Dr. Arnott came to British Columbia in September, 1944, to discuss the subject, as the result of which, at the urgent request of the breeders of the Lower Fraser Valley, the Minister named a committee to carry out accurate investigations, upon the results of which he could base an opinion.

In each succeeding year since 1944 the British Columbia Department of Agriculture has reported on the progress of investigations of the Koch Treatment of farm animals. These investigations have been carried on with a number of different types of diseases, and in every instance we have been able to confirm and corroborate the outstanding clinical results reported by Dr. Arnott in his publications touching on the successful Treatment of these various pathological states. In 1944 we recorded the results of treating seventy-one cases of mastitis, and the following year this investigation was continued and twenty-nine cases of sterility or infertility were treated. In both years the results of the investigations were satisfactory, and while some cases failed to respond completely to the Treatment, the majority of them did so. In all our work the Department of Agriculture found Dr. D. H. Arnott to be most cooperative and helpful.

Last year we indicated that animals showing clinical symptoms of Johne's disease were inoculated in May with Glyoxylide Treatments and re-inoculated a week later. Now, after eighteen months' observation, Dr. W. R. Gunn, Live Stock Commissioner and Chief Veterinarian, states that this herd which at the request of the owner was given the Glyoxylide Treatment in May, 1946, is apparently in good health. On October 22, 1947, he stated: "At that time, out of a herd of between twenty-five to thirty milking cows, there were four clinical cases, with one in the very advanced stages of the disease. Checks made periodically since that date have shown that all clinical cases recovered. The general over-all production of the herd has shown, by cow-testing records, to be up to a very high standard. The cattle are all in very satisfactory condition, and from the standpoint of disease for which they were treated not a single additional case of Johne's disease has appeared, and the owner is highly satisfied." Since reporting the above, Dr. Gunn has discovered that two additional cows, which have been added to the herd are showing clinical symptoms of Johne's disease. At the owner's request he has administered the necessary injections of Glyoxylide. These cases also are being closely followed up because it is evident that contamination remains on the premises.

Because of the way in which Dr. Arnott and Dr. Campbell corroborate our findings in this connection, we reproduce below their statement as shown on pages 10 and 11 of "The Cure and Prevention of Mastitis and Contagious Abortion:"

"In concluding, we have thought it well to place on record here, authentic clinical data concerning an infectious, contagious disease for which today, except for the Koch Treatment, 'There is no known cure for this disease after symptoms develop, and there is no available method to immunize cattle against this infection. Treatment must, therefore, be restricted to preventive measures. It is consequently in the best interests of the owner to slaughter animals showing symptoms with the least possible delay.'" (Department of Agriculture, Dominion of Canada, *Bulletin* No. 167.)

"The disease now conquered for the first time in the history of veterinary surgery is known as Johne's disease.

"It is a chronic dysentery in cattle; a pseudo-tuherculous enteritis caused by mycobacterium paratuberculosis.

“Mycobacterium is the term given to a genus of bacteria which includes tuberculosis, paratuberculosis and lepra.

“Here is what happened:

“An outbreak of a fatal unidentified disease in a herd brought an investigation by the staff of the Ontario Veterinary College. To assist this work they slaughtered another sick cow and the disease then was identified by post mortem examination to be Johne’s disease. Under supervision of a member of the staff of the Ontario Veterinary College, tests were made which revealed the presence of the disease in eight other cows.

“The experts who had made the diagnosis of Johne’s disease advised the owner to dispose of all affected animals, to protect the rest of the herd. However, he decided to try the Koch Treatment.

“On April 19th, 1943, the Koch Treatment was injected, and repeated twice, at weekly intervals. “No other treatment was employed, and nothing further was done.

“Six weeks later the entire herd again was given the clinical test. Another animal was found positive to the test. Of the eight found positive at the first test, and subsequently given the Koch Treatment, four were found negative, and therefore should be regarded as having been cured of the disease. They have improved in condition and are milking well.”

In our *Annual Report* for 1945 it was pointed out that, “life is promoted, sustained, and reproduced by the use of food. For good health the supply must be adequate in amount and variety. For the best normal results it is necessary that the food be well digested, and also that the potential energy contained therein be transferred into living energy throughout the body at a vigorous rate, burning the food properly in each individual cell where it unites with oxygen for this purpose. This living chemical reaction is spoken of by medical science as ‘internal respiration,’ and it must take place continuously because Nature has provided the body with no reservoir wherein oxygen may be stored to be drawn upon at will or in time of need. It is upon the degree approaching perfection with which food is thus turned into living energy consistently that conditions requisite for good health are best maintained, that disease is best resisted, that life is best reproduced.

“It is Dr. Koch’s belief that certain carbon compounds perform an important intermediary step in the living chemistry by which food is turned into life itself; and should the supply of these compounds fall below that requisite for the best conditions, life may continue, but vigorous good health may be lost.

“It is Dr. Koch’s belief that a normal supply of these essential carbon compounds often can be renewed by the hypodermic administration of the Reagents which he discovered.” (*Annual Report*, Department of Agriculture, British Columbia, 1945, page 24.)

The Department of Agriculture, after making its investigation of different diseases, is inclined to agree with this claim. We have reached our favourable conclusions on the Koch Treatment through a carefully planned method of obtaining practical first-hand information in actual field-

work among dairy-herd owners. Our observations have established the fact that various pathological states sometimes were present in one animal, all of which cleared up promptly following the administration of the Koch Therapy. It seems only right that we should accept the explanation furnished by Dr. Koch that these and other serious diseases stem from the breakdown of the oxidative mechanism upon which effective natural immunization to disease primarily depends. Some of the papers referred to in this report tend to support our acceptance of this theory.

We wish also to express appreciation to Dr. D. H. Arnott, whom we have found to be most useful, cooperative, and able in carrying out this work. His action in making available the Koch Treatment without delay has been of material benefit to our livestock men. In fact, at a meeting of the Joint Dairy Breeds Association of British Columbia recently held, the following resolution has been passed:—

“The Joint Dairy Breeds Association of British Columbia wishes to express its appreciation of the effort made by the British Columbia Department of Agriculture to determine the merit of the Koch Treatment in controlling and curing diseases of dairy cattle, and request that the Department of Agriculture continue to make available the Koch Treatment to owners of dairy cattle.”

The Koch Investigating Committee, which since its appointment on October 4th, 1944, has studied cases and received reports from dairy-herd owners, believes it has now completed its duty and is able to state that the question of the usefulness of Glyoxylide has been thoroughly studied. Our findings have been used by such men as W. Bruce Richardson, B.S.A., who in April, 1947, presented to the University of British Columbia, as his essay in partial fulfillment of the requirements for his degree in agriculture, “The Koch Treatment and the Use of It on Dairy Cattle in the Chilliwack Area.” This excellent and readable essay is now available to farmers and others who are interested in the study. In preparation of this essay Mr. Richardson had access to much of the material made available by Prof. S. N. Wood, D.V.M., Department of Animal Husbandry, College of Agriculture, University of British Columbia, a member of our committee, who in March, 1947, published an article in *Butterfat*, the organ of the Fraser Valley Milk Producers’ Association at Vancouver. This article was entitled a ‘Preliminary Appraisal’ of Merits of the Koch ‘Glyoxylide’ Treatment for the Correction of Mastitis, Sterility and Other Functional Diseases of Dairy Cattle.” A further article published in the *B. C. Farmer and Gardener* in the June 1947, issue deals with “Acetonemia,” by G. F. R. Barton, D.V.M. These and other articles will appear in a symposium to be published in Volume 4, No. 1, January 1948, issue of the *Commentater*, published in Vancouver.

These items that have appeared in the farm press of British Columbia within the past year all indicate the serious attention that has been given to the investigation of this new type of veterinary therapy in this Province, together with the profitable and increasing rewards gained through the use of the knowledge acquired.

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