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ADVISORY FUNCTIONS OF THE FIELD VETERINARY OFFICER

by

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In the preparation of a paper on this subject it is rather difficult to know exactly where to begin, what period to cover, what to include, and what to omit.

In the first place, all will agree that in the early part of this century the chief veterinary officer's advisory recommendations to his Minister in the form of the Stock Act, the Slaughtering and Inspection Act, the Quarantine Regulations, and such measures, were all very laudable and far-seeing efforts to protect the health of the live-stock of this country, and also indirectly the health of the human population. As a result of the eradication of Sheep Scab at an even earlier date, and the general protection of live-stock by the prevention of the introduction of disease from outside sources, this Dominion enjoyed an enviable animal health record. As will be realised, field veterinary officers were practically unknown in many cases, the then veterinary personnel being mainly engaged in meat inspection and instruction work, and the general supervision of meat inspection, so as to enable full advantage to be taken of the advent of refrigeration and the export of meat and meat products.

I have briefly detailed some of these features, with a view to illustrating the far-sighted policy then put into operation by such eminent members of the veterinary profession as the late Dr. Gilruth and Dr. Reakes. From some of the reports of their early struggles for recognition of their views and policies, it is quite clear that the country was then so free from animal disease that it was most difficult to convince the Parliament of the day that such measures as mentioned were necessary or worth-while.

During the first period of our farming history, the few investigations into disease were mainly concentrated upon outbreaks of Swine Fever, Anthrax, Blackleg, and the follow-up of the source of infection in such diseases. On perusing some of the leaflets for farmers, a typical medium of disseminating advice, we find such titles as "Parturient Apoplexy, or so-called Milk-fever","Nasal Bot in Sheep (Grub in the Head)", "Blood-poisoning (Malignant Oedema) in Sheep after Shearing and Lambs after Docking", "The Sheep Maggot", "Pseudo-tuberculosis in Sheep (Lymph-adenitis)", "Anthrax", "Parasitic Gastro-enteritis", and "Two diseases affecting pregnant ewes". The keen observations of those early investigators have stood the test of time, and although certain additions and modifications have been made in the intervening years, it is surprising how the views then expressed are still in many respects applicable to the present day.

With the passage of the years, with closer settlement, and with more intensive methods of animal production, it was inevitable that the disease position would become wider in scope and much more serious. There has been a greater effort to concentrate production upon those areas of high productive value, by intensification of the stock-carrying capacity, and the increase in disease as a result of such efforts is not so surprising when one contrasts present methods with those of earlier years. One must not assume that present methods are wrong, that a farm carrying one cow to the acre, or 6 or 7 ewes to the acre, should be abandoned and the stock moved to the poorer country, where the risk of disease is less, because if we do then production must decrease accordingly. It is under intensive conditions that one views animal disease as it exists today. It is, therefore, a natural sequence that there has been a very marked increase in the number of veterinarians in the country, and the demand is still increasing. The main function of our field veterinary officer is one of endeavouring to keep stock healthy under the conditions as they exist today. The role of this officer is mainly concerned

with the diagnosis, prevention and control of disease. The work is closely connected with diseases scheduled under the Stock Act, with investigation of stock mortalities, and with testing of herds for tuberculosis. In the field of animal husbandry very valuable work is carried out by the field officer in his contact and discussion with the farmers from day to day. It is very rare indeed for a veterinary officer to visit a farm on some specific veterinary problem without being asked for an opinion on the condition of some other animals or some other live-stock problem. The scope is almost unlimited in those areas where veterinary surgeons have not been established in practice.

In most districts there was so much routine work and non-veterinary work, dealing with noxious weeds, rabbits, brand registration, inspection of rural slaughterhouses, etc., that Stock Inspectors were appointed to deal with this side of the country's needs. The training of the Stock Inspector to recognise diseases such as Tuberculosis, Actinomycosis, and other diseases scheduled under the Stock Act, has relieved some of the strain on the field veterinary officer. Frequently the services of the Stock Inspector are co-opted to assist in such work as vaccination of calves and sheep against blackleg, the vaccination of calves against contagious abortion, the collection of specimens of milk for laboratory examination, or the forwarding of composite milk samples from registered herds for the biological test for tuberculosis. Much of the inspection of sheep for lice and ticks at saleyards is carried out by the Stock Inspector. Any reference to the varied and multifarious veterinary advisory work later detailed will include that carried out by the Stock Inspection staff.

In some districts again, the field veterinary officer, in addition to his field work, is required to carry out the veterinary supervision of a meat inspection staff engaged in the inspection of meat at abattoirs and meat-export slaughterhouses. The actual inspection work is, in the main, carried out by trained lay staff, but when special problems crop up and call for clarification the matter is referred to the veterinary officer. The training of such a large staff of lay inspectors and maintaining the numerical strength is a work of some magnitude, as a uniform method of inspection must be ensured at all plants in operation. This involves veterinary lectures and demonstrations, instruction in anatomy, elementary physiology, location of lymphatic glands, and other instructional work as to procedure, in addition to the practical side of meat inspection and the recognition of those diseases most commonly seen in slaughtered stock.

It is impossible to give the quantum of work carried out by all these officers working generally under veterinary supervision, or even that carried out by veterinary officers alone. The whole team combines and co-operates in the detection of disease in the field, in the inspection of carcases at the works and abattoirs, in forwarding specimens from field or works to the Animal Research Station at Wallaceville, where a valuable diagnostic service is provided for the benefit of the Meat Inspector, the Stock Inspector, the Veterinarian, and/or the farmer. The problem may be the heavy incidence of hydatid disease in lambs and sheep, the high incidence of tuberculosis in pigs, or the percentage of cull ewes affected with lymphadenitis. The inspection of lambs' livers, and their microscopic examination at the Animal Research Station is used as a barometer to detect the early possible onset of an outbreak of that serious disease known as Facial Eczema, or Photosensitisation.

Although figures are of little value in covering the field of work carried out, as so much of it cannot be recorded, it will be of interest to note some of the following:-

Tuberculosis:

Under the Stock Act the farmer is required to notify the Department of the existence of this disease in the herd. In this connection 5,088 head of cattle were condemned for tuberculosis under the Stock Act during the twelve months ended 31st March, 1945, this including 556 reactors to the tuberculin-test.

The tuberculin-testing of stock is carried out for export purposes, on suspicion where disease cannot be diagnosed clinically, or at the owner's request. In the latter case it may be an entire herd, or a single house cow, a registered dairy herd supplying milk for human consumption, or a factory supply herd, where the owner desires a check-up, or a reduction of the disease in his pigs. 17,319 cattle were tested during the year, the majority being at owner's request. It is felt that a considerable increase in testing would take place, and much of this disease eradicated from the herds, if an increase in the present compensation were paid to owners of stock. Many owners of herds have eradicated the disease and have maintained tubercle-free herds by an annual application of the test.

Actinomycosis and Actinobacillosis:

757 head of cattle were condemned under the Stock Act during the year, mainly advanced bone cases or run cattle not amenable to treatment. Probably about the same number were treated by potassium iodide tablets, on the advice of Departmental officers. In other cases field veterinary officers have treated cattle by intravenous injection of sodium iodide.

Johne's Disease:

In the control of this disease the field veterinary officer has had a very difficult time. It was at first considered that the application of the Johnin test would be an effective means of detecting closed or carrier cases of the disease, but after a very extensive and exhaustive trial Johnin as a diagnostic agent had to be abandoned. Clinical cases of the disease are dealt with under the Stock Act. In the Taranaki district Mr. E.H. Stephens has persevered with the test for a number of years in a few herds in a valiant attempt to eradicate the disease from these herds. Before an effective control in the prevention of spread of the disease can be put into operation, it is apparent that a good deal of research work will require to be carried out.

Anthrax:

Fortunately, New Zealand has been comparatively free from this disease. An outbreak occurred at Dargaville in 1932, another at Bombay in 1940, and one last year in the Wellington District. The disease was confined to the farms of origin, and losses of stock on those farms was prevented by vaccination. The vaccine used is so effective that no further losses occurred on any of the farms where the original outbreaks took place.

Blackleg:

Much vaccination work is necessary in the control of this disease in the field. In Taranaki and in parts of the Auckland district the disease would take heavy toll of young cattle if vaccines were not used extensively. A total of 52,979 calves were vaccinated against the disease last year. This item alone takes up much of the time of the Stock Inspectors in the districts most seriously affected. The vaccine is prepared and supplied by the Animal Research Station, Wallaceville.

Of late years this disease is becoming increasingly prevalent in certain sheep flocks, and much useful work is being

done in demonstrating the method of vaccination to the sheep-farmer, or in actually doing the work for him. The sheepmen have received splendid help in this direction, and a lowered death rate in their flocks has resulted.

Among the non-scheduled diseases the field veterinarian and the Stock Inspector have covered a varied list of diseases and diseased conditions in stock. A few years ago farm schools were held throughout many districts where lectures and demonstrations on stock diseases were part and parcel of the programme provided. At such schools the farmer's enquiries might range from some obscure lameness in a horse to a blunt enquiry for a cure for contagious abortion or mammitis. Much advisory work on the prevention of these diseases was disseminated by lectures, bulletins, broadcasts, articles in Journals, at meetings of the Farmers' Union, Young Farmers' Clubs, and at field days in different parts of the country. Fortunately, the advent of vaccination in the control of contagious abortion introduces a more practical approach to the control of this disease, and the reports indicate more conclusive results than those likely to accrue from lecturing about the control of spread of the disease in a herd. The cure for mammitis is still being asked for.

Vaccination work against contagious abortion disease is increasing from year to year, and is likely to increase much further. Although the total numbers are not available to me, over 12,000 calves were vaccinated against this disease last year in the Wellington district. Although an attenuated vaccine, it is important that this vaccine should be handled by veterinary officers or Stock Inspectors, so that its use will not be abused.

In the field of animal husbandry in all classes of stock, the advisory work of live-stock officers has covered the common parasitic diseases affecting lambs, hoggets, calves and pigs. Here stress has been laid on the necessity for adequate and suitable feed, in addition to whatever drenching programme is being carried out on individual farms. The extension work undertaken in regard to drenching was responsible for the almost universal use of the nicotine bluestone drench, prior to the advent of Phenothiazine. The good animal husbandman must study pasture growth and its control, its suitability for stock at various stages of growth, its subdivision and its use by rotational grazing, and especially its worm load in certain seasons, taking into consideration that the young growing animal is a most susceptible host for parasites. This knowledge is necessary when the subject has to be discussed intelligently with the farmers, who require reason and argument to support any change in their normal routine. Although most attention has been concentrated upon parasitic gastro-enteritis and its reduction by management, feeding, and drenching, other parasitic problems have been given due attention.

An enormous amount of propaganda work has been carried out in an attempt to reduce hydatid disease in animals with a view to its reduction in man also. Post-mortem field demonstrations have been given, lectures and broadcasts arranged on the subject, and demonstrations and exhibits at shows have been staged. In a few instances the recording of the incidence of the disease in lambs found at the works has definitely demonstrated the value of dosing the dog for the removal of the causal tapeworms.

The veterinary staff has collaborated with the Hydatid Research Department at the Otago University in connection with hydatid research and field control, and at present is interested in a field experiment which is being carried out in Central Otago.

The veterinary staff has also co-operated with the Goitre Research Department at the Medical School, Dunedin. This is applicable on account of the occurrence of goitre in animals in that district, and especially because of the frequent epidemics of congenital goitre in lambs which have occurred, involving con-

siderable mortality. The disease has been successfully controlled by the use of an iodised salt lick.

In those districts where the liver-fluke parasite is prevalent it is necessary for field veterinary officers to be thoroughly conversant with all aspects of control used in reducing disease caused by this trematode. It must also be remembered that this parasite is not only responsible for causing liver damage, anaemia, dropsy, and the usual train of symptoms associated with liver disease, but that, indirectly, in its migration and damage to liver it precipitates mortality in sheep caused by Black Disease. This was demonstrated to be the cause of mortality in sheep in Hawke's Bay by Dr. Hopkirk. Vaccination of sheep against Black Disease is now regularly practised in fluke-infested districts, and demonstrations and instruction in vaccination is sometimes necessary.

In connection with the discovery of fluke in some irrigated country in Central Otago in recent years, it is noteworthy that the first evidence of the parasite was seen in lambs and sheep sent in to the works for slaughter, the matter being followed back to the source. A survey of the area followed, and in due course lectures and demonstrations were given advising farmers as to the best methods of control.

In the control of other diseases of stock, demonstrations are given on such practices as vaccination for entero-toxaemia and vaccination for contagious ecthyma. Demonstrations in certain districts have been held on the examination of sheep by palpation for cases of lymphadenitis. The reduction of the latter disease is of considerable economic importance from a meat inspection and meat export angle.

In the prevention of disease in sheep, the field veterinarian is called upon to investigate and advise upon pregnancy toxaemia of ewes, bearing trouble, foot-rot and generally to investigate a mortality from any cause whatever. In collaboration with the Animal Research Division enquiry is conducted into mineral deficiency diseases, suspected cases of plant or mineral poisoning. The careless use of arsenical weedicides and foot-rot dressings has resulted in many cases of arsenical poisoning in cattle, sheep, and horses. The laboratory findings at the Animal Research Station have been most valuable in confirming many cases where the classical post-mortem findings are not always present. Mortalities following dipping operations are of common occurrence in sheep districts, and have been particularly severe during the last dipping season in Otago and Southland. The farmer invariably requires an investigation into these losses, either by Government field officer or by a veterinarian in private practice. In a number of these cases the laboratory findings show that infection with the blackleg organism is the cause of the losses. Some very good work was carried out at the laboratory into mangold poisoning in pigs, and here again the field veterinary officer requires to do his part in the field.

It is felt that one could go on for some time, listing in detail many of the diseases which come under the notice of the field advisory officer, but there is so much to be done as a result of personal contact on the farm that any reiteration of details would bore the listeners. The examination and testing of imported stock in quarantine, their care and management, and delivery - free from disease - to owners, as well as the examination testing, and certification of stock for export to all countries, is another item on the list. In this connection it is of interest to note that a valuable pedigree bull arrived in quarantine from overseas with full veterinary certification, which under observation and test was found to be in advanced stage of tuberculosis. The Wallaceville Laboratory confirmed the disease from an examination of sputum from the animal.

The numerous State Farms throughout the country under the Mental Hospitals Department, the Prisons Department, and other Departments require veterinary supervision and advice in many of their animal transactions. Tubercle-free herds have been established at many of these farms, and assistance is given in many ways where the Department concerned invariably refers live-stock matters to the Department of Agriculture.

Although so much is done by personal contact on the farm, by lectures at Farmers' Union meetings, by broadcasts, by Journal and newspaper articles, one if often left with the impression that actual veterinary practice is more convincing to the farmer than lecturing and advisory work. I would like to quote a personal experience in this connection. When giving a lecture at a Farmers' Union meeting in Pahiatua some years ago I was dealing with some of the diseases of reproduction in dairy cows. When question time came I was asked for cures for contagious abortion, mammitis, etc., but one old gentleman got up and said I appeared to know the theory of the subject, but could I do anything on the practical side. He had a cow in difficulty over parturition and could I assist in the matter. The meeting was quickly closed, and all present proceeded to the farm for the demonstration. When twin calves were delivered safely in view of a greatly-increased audience, I was impressed that the advisory work was the most trying and least convincing part of the duties of a field officer and that practical demonstration was much more valuable.

There is some food for thought in the variety of work a field veterinary officer is called upon to perform. The work is never monotonous, is always interesting, and although occasionally the farmer is disappointed when it is shown that a mortality is due to his carelessness or mismanagement, on the whole the farmer is not an unreasonable individual and appreciates a worth-while effort on his behalf.

DISCUSSION ON Mr. McILWAINE'S PAPER:

MR. TAYLOR: For what period is it necessary to vaccinate stock against anthrax when they are being grazed on a previously anthrax-infected farm?

MR. McILWAINE: It has been proved that anthrax spores can survive in the soil almost indefinitely, and cases of survival for as long as 35 years have been proved by a professor of bacteriology in South Africa. When an outbreak occurs on a farm it is necessary to vaccinate the animals during the lifetime of the owner, at any rate, in order to prevent new animals coming on to the farm contracting the disease. The outbreak in the Bombay district occurred on a farm where in the early days infected cattle had been destroyed and buried. The assumption was that when excavating for the purpose of extending a pig-sty the farmer unearthed some of the spores and that the outbreak occurred as a result of the earlier one, 35 or 40 years ago.

MR. TAYLOR: Would it also be necessary to vaccinate all young stock born on the farm?

MR. McILWAINE: Yes.

MISS BARTRAM: Farmers are sometimes puzzled by the actions of veterinary officers, because the farmers do not have enough explained to them. They take tremendous precautions to prevent a disease spreading and they are sometimes puzzled that the veterinary officer does not always take those precautions himself. I think there should be more emphasis on the actual prevention of disease.

MR. McILWAINE: I think it is on record that veterinarians themselves in the Old Country have been the culprits in spreading foot and mouth disease through lack of proper precautions. It all depends on the type of disease that is being dealt with. If it is swine fever or foot and mouth disease or any other highly cotagious disease, all possible precautions should be taken. Foot rot disease in sheep is well recognised everywhere, and precautions should be taken but people treat it more or less with contempt.

MR. WARD: The testing of imported bulls for tuberculosis was mentioned by Mr. McIlwaine, and the question of the reduction of the disease in dairy cattle has been and is being raised frequently. Does Mr. McIlwaine think there is anything in the suggestion at present being made by certain Breed Societies and other organisations that a start should be made with the testing of bulls for T.B.? Would that be a practicable proposition so far as the Department is concerned? Would it reduce the incidence of tuberculosis very much, either from the point of view of genetic resistance (if any) or by reduction of actual incidence?

MR. McILWAINE: I think it is possible and quite practicable for associations and Breed Societies to require that all male animals sold for breeding purposes should have a certificate of freedom for tuberculosis. I doubt very much whether ultimately it would have very much effect on reducing tuberculosis in the dairy herd, but in any case, when a farmer goes to a stud breeder for a pedigree animal, and pays a good price for it, he is entitled to have it free from tuberculosis. I think the Ayrshire Breed Society did make a move in that direction, and some Ayrshire breeders have eradicated the disease, and can guarantee that any animals they sell will be free from tuberculosis. The other Breed Societies should follow that example. We have had some resolutions passed on from the Minister requiring that all pedigree animals sold should be subject to that test. The present scheme of testing is a voluntary one, and unless the request comes from the Society, or the industry itself, we have no authority to go on to pedigree breeders' farms to carry out the work compulsorily.

COLONEL WATSON: A previous speaker wanted to use the danger of infection as a means of preventing the importation of stock, but, if we aim at exporting, other countries may treat us the same way.

MR. McILWAINE: We are in the fortunate position that certificates can be readily granted as regards freedom from various diseases which are more important than others. The freedom of this country from foot and mouth disease is important. Other countries could not give the same certificate. New Zealand has developed quite a considerable export trade in various breeds of sheep to Argentina and other South American countries, and there is an interchange between Australia and New Zealand. It has often been said that in the post-war period the export angle of our live-stock should be encouraged and I think that is reasonable, but the tendency with breeders in New Zealand is to concentrate more upon the female than on the breeding of high class sire though I have no doubt that in due course that will take place. New Zealand has produced famous racehorses, and I do not see why it should not also produce some of the best quality dairy stock and sheep, particularly for Argentina and other countries that require them.

DR. DRY: Is not the real objection to the bringing in of many bulls that their genetic worth is not what it is supposed to be? It could be made out that they are worth more than they really are so that their descendants could be profitably sold. If it could be shown that imported bulls are really worth what they are supposed to be, as distinct from advertising, would it not be to our advantage to admit them?