

of fifteen, Wellington and Canterbury Districts both showing a decrease. The decrease in the Wellington District is not altogether general, being confined to a few inspectorates—some of the others showing an increase. The condemnations of cattle by Stock Inspectors for this disease were distributed as follows: Auckland District, 2,571; Wellington, 1,168; Canterbury - West Coast, 387; Otago-Southland, 207.

The number of cattle (excluding calves) examined on slaughter by Inspectors at freezing-works and abattoirs was 328,809. Of these, 18,456, or 5.32 per cent., were found affected with tuberculosis in varying degrees, those only very slightly affected being included.

Actinomycolosis.—A considerable number of animals are still found suffering from this disease, and during the year it was found necessary to deal with 802 animals, distributed as follows: Auckland District, 387; Wellington District, 237; Canterbury - West Coast District, 85; Otago-Southland District, 102. These figures show an increase of 75 over those of the previous year.

Cattle-tick.—Every endeavour has been made to carry out the reasonable requirements of the regulations as regards the control of the cattle-tick in the affected areas without causing undue hardship, and while the question of reducing the ticks in the area A was not overlooked, special attention was devoted to the question of preventing its spread into clean areas and endeavouring to clean up Area B. In the interests of these districts, it was necessary to institute a number of prosecutions (forty-eight) for failing to obtain permits from the Inspectors as required under the regulations. Up to the end of the year fifty-two dips have in all been constructed, and some others are under construction. Although the principle of control of dips by the settlers in the district seemed to be the ideal, it has not worked out in practice as satisfactorily as desired, and it would appear that control by local authorities might be more advantageous to the settlers as a whole. One of the difficulties is the marked difference between the dipping-charges to subscribers and non-subscribers.

BUSH-SICKNESS INVESTIGATION.

During the past two years considerable progress has been made with the investigations into the causes of, and remedies for, bush sickness. Mr. B. C. Aston, Departmental Chemist, is at the present time engaged in the work of reviewing the whole of the experiments, and operations in this connection which have been conducted during the past five years at the Mamaku Experimental Farm. His articles are now appearing in the *Journal of Agriculture*, and when completed they will indicate what has been done.

The Department has now reached that stage where it can in a practical manner demonstrate to a farmer how he can take up a section of bush-sick land and secure a living by successfully rearing stock during the process of breaking in the land. Full details cannot be given here in this report, but they may be found in Mr. Aston's articles referred to above. In this connection, however, it is advisable for any one interested to visit the Experimental Farm at Mamaku, where considerable valuable information upon this subject may be obtained.

In addition to dairying, the rearing of calves has received close attention at Mamaku. It has been ascertained that most of the deaths of calves which occurred on bush-sick pasture in past years were evidently not entirely due to bush sickness, but rather to the fact that parasitic intestinal disorders played a big part. Successful experiments have now revealed the fact that calves that are free from parasitic infestation can be satisfactorily reared by the simple treatment of allowing a daily supply of molasses. This method will carry them on until they are ready to sell off the bush-sick country. If, on the other hand, it is intended to retain them on the bush-sick country it is essential that medicinal treatment with citrate of iron and ammonia be adopted, the drug being given mixed with food or by means of brick licks.

The Department has tried many preparations in the course of its experiments, and a process of elimination of unsuitable or too expensive specifics has reduced the list of remedies to two—namely, citrate of iron and ammonia, and molasses. The fundamental principle throughout these investigations in connection with any suggested remedy has been that the expense involved, including labour, must show a profit, however small. The experiments would lose their best practical value otherwise.

Dairying was recommenced on the farm during the past year, with a view to demonstrating that a dairy farm could be managed successfully on what is known as bush-sick country. So far the project promises well, and ultimate success is hoped for. A herd of about a dozen cows, not specially selected, has been set aside for this purpose. One of the most important factors to ensure the success of this scheme is that the cows must not be allowed to fall bush-sick during pregnancy, as otherwise dead calves, retention of the afterbirth, and other undesirable effects may be looked for. The calves that are born must never be permitted to go back in condition; their steady growth and development must be maintained from birth.

For a long time it has been a recognized fact that horses, pigs, and poultry can be reared upon bush-sick land without contracting the sickness that inevitably overtakes cattle and sheep. Calves can now be reared with special treatment, and adult cattle, if attacked by bush sickness, will recover with the right treatment. In order to follow up its progressive policy the Department will now require to turn its attention to preventive and remedial measures in so far as sheep are concerned. Our past experience with cattle should prove invaluable in this connection.

LIVE-STOCK STATISTICS.

Sheep.—The sheep returns as at 30th April, 1923, showed a total of 23,081,439 head, the first increase for any year since 1918, when our flocks reached 26,538,302, the highest yet recorded. The increase reached the substantial figure of 859,180, but an even more satisfactory feature is the large increment that has taken place in the breeding-ewes, 566,949 of the increase being breeding-ewes. It is