

4. It is recognized that treatment such as this, while of the utmost value as proving the correctness of the opinions arrived at as to the cause of the trouble, is not to be looked upon as a final solution of the matter, seeing that it involves time, trouble, and expense.

5. What is really required, and what the Department is aiming at, is to find a means of prevention; in other words, to endeavour to do away with the cause of the trouble. With this in view experiments in treating the soil have been carried out, and up to a certain point these have been very successful.

6. It has been proved that the application of phosphatic manures, in the form of top-dressing, so improves the soil conditions that both cattle and sheep can be carried in good health for a much longer period than they could be on non-treated land. In addition, the generally increased nutritive value of the herbage enables the animals to do better in every way. The particular value of the top-dressings lies in the fact that they stimulate root-growth and root-action in the food plants, thus enabling them to take up more iron. There is iron present in the soil, but it is almost entirely in the form of silicate of iron, which is extremely insoluble and unavailable for plants. It is probable that some chemical action takes place as a result of phosphatic manuring which renders some of this iron available.

7. Our experience at Mamaku Farm shows that the application of suitable top-dressings increases the value of the land for grazing purposes by at least 75 per cent., and possibly 100 per cent. for the time being. When the effect of the first top-dressing has disappeared the land is still better than it was at the beginning, and though further manuring is then needed a tangible and permanent increase in the value of the land has been attained, and it only needs good farming to continue this. As the soil becomes more consolidated as a result of carrying an increased quantity of stock, and at the same time accumulates humus, it will become more naturally fertile, require top-dressing to a less extent, and become more healthy for stock.

8. The most suitable manures for use as top-dressings are, in order of merit, as follows: (a) Superphosphate and basic slag—equal parts mixed; (b) superphosphate and lime; (c) guano. Basic slag alone, though it produces an abundant growth of herbage, does not seem so suitable for combating bush sickness as do the manures above mentioned. This is probably due to the lime contained in it. Lime alone seems to do more harm than good in connection with bush sickness.