Waitomo County: Stock Deficiencies.

In consequence of a spring season exceptionally favourable to mortality in sheep in the Mairoa district, even a good top-dressing with lime and super was not adequate to prevent a somewhat disastrous experience with the sheep experiments in this locality, the mortality being high, although checked to some extent by the fertilizer top-dressing. It is probable that lack of an adequate supply of cattle to control surplus feed contributed to the result, and consequently, as some of the paddocks top-dressed with 5 : 2 and 3 : 2 superphosphate mixtures had only been stocked for a short time, it was thought advisable to commence a new series of experiments, using sheep from an outside district, and at the same time providing adequate control of growth by means of cattle. In the meantime, numbers of pasture analyses, both from the Mairoa and the Kopaki experimental areas, have been made. The most striking features of the Kopaki soil are high content of phosphoric acid and lime, low content of iron, small seasonal variation in mineral composition, and the lack of marked response to top-dressing.

Estimation of sulphur in the pasture-analyses from the experimental paddocks at Mairoa revealed no significant increase in sulphur content, as the result of manurial applications of gypsum.

Te Popo District, Taranaki.

In this district sandstone hills have a thin covering of volcanic ash, upon which grows a pasture composition for the most part of danthonia. Lamb mortality, especially in very young lambs, has been high in this district, where it is also most difficult to rear fat lambs. The fact that the pasture is composed largely of danthonia makes it unresponsive to phosphatic top-dressings, but the health of the stock was greatly benefited by making available to them a lick comprised of iodized salt, bone-meal, oxide of iron, and molasses.

Morton Mains District, Southland.

In this district increasing difficulty is being experienced in rearing lambs. The nature of the soil is alluvial, of a leached silty loam texture overlying gravel of rounded quartz. In general contour the land is undulating with many boggy depressions. Until recently the country was stocked generally with cattle, which before phosphatic top-dressing was adopted was often affected by Waihi disease. The pastures on this area were frequently broken up for cropping, and were treated with heavy applications of either burnt or ground lime, but when sufficient phosphate was applied to the soil Waihi disease disappeared. Sheep, however, could not be successfully reared in the absence of cattle. Sickness usually appears in December, when lambs which have thrived up till then become low-conditioned, anæmic, dull, and lustreless in their wool. The mortality is large, death occurring rapidly, while ewes, and even wethers, sicken in some seasons.

Various licks have been tried, but so far without result. However, as the disease may be a modified form of bush sickness, the limonite and salt lick is at present being given a careful trial.

Pasture analyses made so far have indicated no deficiency of any of the usual mineral constituents, both phosphorus and lime being present in adequate amounts, though there are some indications that the iron content is lower than the average.

Analyses of ewes' milk and of bones from sick lambs have been made, but, although the bones were apparently somewhat abnormal, the work is not sufficiently far advanced to allow any opinion to be expressed.

A somewhat similar trouble in calves on new bush-burn peaty soil, near Riverton, undoubtedly due to iron deficiency, has been cured by the administration of iron-ammonium-citrate.

Bovine Eclampsia in the Waikato District.

This disease occurs on a number of farms in the Waikato district, and, as it was thought that excessive amounts of nitrates or nitrites in young pasture might be a predisposing factor, estimates of these were made in a number of pasture-samples collected. Analyses indicate that very little difference occurs in the nitrate content of affected and unaffected pastures, while the figures for phosphoric acid and calcium did not afford any means of distinguishing affected farms from those more fortunate.

Miscellaneous.

(*a*) An outbreak of bone-chewing and falling-off in milk-yield in North Taranaki was shown to be due to overstocking during a seasonal drought. The addition of superphosphate to the drinking-water is indicated as an appropriate remedy for such occurrences.

(*b*) Severe illness occurring in a dairy herd near a superphosphate-works was traced to the condensation of fumes containing fluorine on the pasture, through the use at the works of North African rock phosphate.

(*c*) Flax-strippings analysed to determine their value as supplementary stock-feed showed a content of only 5·95 per cent. protein in the dry matter, an amount too low to render this a satisfactory stock-feed.