

TOP-DRESSING OF NORTH AUCKLAND HILL LANDS.

SOME EXPERIMENTAL RESULTS ON SANDSTONE COUNTRY.

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DURING the past two seasons manurial top-dressing trials have been carried out under the direction of the writer on an area of more or less deteriorated hill land on the property of Mr. R. F. Ellis, near Kaipara Flats. The experiment was designed somewhat on the lines set out in an article in the *Journal* for November, 1926, dealing with the top-dressing of King-country hill lands. Accurate records were kept of the cost of application of the fertilizer and of the stocking of each paddock top-dressed, as well as of an area adjoining which was not treated in the first season.

The area selected for the trials consists of some 90 acres of typical sandstone hill land representative of large areas of similar country throughout the North Auckland Peninsula. Originally carrying good mixed bush, and sown to English grasses from twenty to forty and more years ago, the deterioration has varied according to the management and the type of stock carried, until at the present time there is a wide variation in the type of pasture and second growth on these lands. However, whether brown-top, danthonia, or paspalum have come in to form a sward and prevent a covering of bracken fern, hard fern, or manuka, or whether the reversion has been to these forms of secondary growth, the results as far as the stock carried is concerned have been the same—a replacement of breeding-ewes by mature cattle and sheep, and a considerable reduction in the number of stock carried.

In the case in question the carrying-capacity, as shown by the records of a 50-acre block with a general southerly and westerly aspect, was not more than one-third of a sheep and one-sixth of a cattle beast per acre, and the owner found it extremely difficult to make any impression on the heavy growth of bracken fern without severely punishing the cattle.

The top-dressing was carried out on two adjoining paddocks, each of 20 acres, No. 1 being treated with superphosphate and No. 2 with basic slag.

PADDOCK NO. 1.

This area slopes generally to the north and west, and the pasture consists mainly of danthonia, with cocksfoot still persisting among the growth of bracken fern which covered about half the paddock. Blackberry was also bad in places.

In the first season this area was top-dressed at the end of September, 1925, with 3 cwt. of superphosphate per acre, and stocked alternately with sheep and cattle throughout the year. The total cost, including freight, cartage to the farm and paddock, and application by hand, worked out at £1 4s. 10d. per acre. The carrying-capacity of the paddock for the year ending 30th September, 1926, as shown by the records of stocking, was four-fifths of a sheep and two-fifths of a cattle beast per acre.