High-country in the District

IN recent years increasing interest has been shown in the development of the inland high-country tussock grasslands of North Otago and elsewhere in the South Island. This article by D. G. Reynolds, Instructor in Agriculture, Department of Agriculture, Oamaru, describes development work which has been done to improve tussock land in the Omarama district, North Otago.

THE Omarama district of North Otago has considerable variation in both soil and climate. Around Omarama itself rainfall is as low as 12in. to 14in. a year and the soil is mainly light and gravelly. Further to the west the rainfall begins to rise appreciably until it reaches from about 32in. to 35in. in the region of Lake Ohau. Where there is this higher rainfall there are several areas of better-class silt and clay loam. Also of note are extensive areas of semi-swamp country where a high water-table reduces the effects of periodic droughts.

This variation in soil and climate is most important in the consideration of development work, for which this area can be divided into three main categories:—

1. Country with a rainfall of over 24in. and semi-swamp country which is capable of responding well to aerial topdressing with 2cwt. of superphosphate and oversowing with up to 6lb. of clover seed.

2. Silts and clay loams which may be cultivated to establish pasture and lucerne where the rainfall is 22in. and higher.

3. The semi-swamp land where in spite of low rainfall the high water-table provides adequate moisture to enable establishment of pasture and lucerne by cultivation.

None of these categories can be termed low-rainfall tussock country. The fact that moisture is adequate is the key to the possibility of their development.

HEADING PHOTOGRAPH: An area of hard tussock oversown with clovers in the Omarama district. The white clover in the foreground has established well.

Value of Aerial Topdressing

Aerial topdressing during winter undoubtedly affords the greatest scope for economic development of this class of country. There is conclusive evidence that a good cover of tussock or other natural vegetation aids establishment by protecting the seedlings from extremes of climate. The success of the strike depends almost entirely on the weather in the following spring, and sometimes the treatment has to be repeated the following year. The main clovers used are red, white, and alsike. On some of the stony, unploughable flats 1 ton of lime is necessary, at considerable cost, before good establishment and growth can be expected.

The cost of establishing pastures or lucerne on cultivated land is fairly high because of distance from markets. The usual rotation is to take one or two crops of turnips or greenfeed and to sow to pasture or lucerne the following December or January. Some excellent pastures have been obtained this way. Lime and superphosphate are necessary but costly.

Pasture mixtures vary, but one that was used with success in the district was 10lb. of perennial ryegrass, 10lb. of cocksfoot, 2lb. of crested dogstail, and 2lb. of timothy, with white clover and Montgomery red clover. Lucerne can also be established successfully. Both the pasture and lucerne will provide good grazing and hay, and in suitable seasons quite good seed crops, particularly of cocksfoot, can be harvested.

The main limiting factor to carrying capacity is the long, hard winter with snow risk, and any long-term development programme must aim at providing good winter forage, mainly in the form of hay, before other improvements can be expected to give worthwhile returns.

Programme at "Ribbonwood"

Mr. R. K. Ireland's property "Ribbonwood" has for several years now been a good illustration of the points mentioned. In 1924 Mr. Ireland began an intensive programme of development at "Ribbonwood" involving the cultivation of large areas of flat land and the establishment of improved pastures and lucerne. In recent years much of the hill country on the property has been topdressed and oversown from the air. Stock numbers rose from 4300 sheep and no cattle in 1924 to 6300 sheep and 140 cattle in 1952. During the same period the wool clip increased from 89 to 180 bales. To overwinter these large numbers of stock 3000 bales of hay were made and in some years a further quantity has been bought in. The photographs reproduced on the opposite page were taken on this property in 1955.