SUCCESSFUL GRAZING OF PASTURES IN SHEEP-FARMING.

THE DEVELOPMENT OF THE TITIPUA BLOCK.

By - W. E. Hunt and A. Stuart.

An area of 5,500 acres in extent, of which 1,500 acres is leasehold, known as the Titipua Block, was acquired by Sir Wm. D. Hunt in 1928, at a nominal figure. This block is situated approximately five (5) miles northwest Of Dacre and is twenty (20) miles by road from Invercargill. It is bounded on two sides by an afforestation area, as the land has been deemed unsuitable for agricultural or pastoral purposes. The district is undulating or rolling country, for the most part ploughable, with red tussock dominant, Areas which had been cultivated and grassed by the original settlers had rapidly reverted to stunted browntop, and these settlers in many cases had been forced to quit their holdings after losing their investments. From this it can be deduced that the area can be rated definitely third-class,. and the carrying capacity placed in the vicinity of one sheep to every two acres,

For the past five years an average of 300 acres per annum of this block has been sown to grass and today some 4,500 acres are carrying fine swards of perennial ryegrass and white clover. The system employed has been as follows - the land is ploughed in the spring and a crop of swedes or turnips taken, one ton of Carbonate of Lime being applied previous to sowing, and the crop sown with 4 cwt. per acre of a proprietary turnip manure. The crop is fed off in breaks by sheep having a run-off on to pasture, (ewes being fed for a month and hoggets for two months) the yields averaging between 40 and 50 tons Per acre. 'In the following spring grass is established with a nurse crop of oats, and at establishment 3 cwt.. per acre of superphosphate is applied. Following the harvesting of the oat crop a second ton per

acre of carbonate of lime is applied in February. The subsequent manurial treatment has consisted of the application of 2½ cwt. per acre of superphosphate in January - February, Up. to the time of writing no further lime has been applied, and on the older pastures which are now approaching six years of age, there is as yet no apparent need of a further dressing.

In the grass mixture sown, only the finest seed available has been used, and in all cases preference has been given to certified seed. In the case of the white clover the opinion has been expressed by Departmental officers that this clover is up to certified standard. The composition of the mixture used is:--

Permanent Pasture Perennial Ryegrass	25 lbs.
Italian Ryegrass	10 lbs.
Timothy (New Zealand grown)	3 lbs.
Mother Cocksfoot (Akaroa,)	5 lbs.
Poa pratensis	1 lb.
Poa trivialis	¼ lb.
Yarrow	1 oz.
Permanent pasture Montgomery Red Clover.	1 lb.
White Clover (Hawkes Bay.)	3 lbs.
	48 lbs. 3 ozs.

The seeding of oats is. 2½ to 3 bushels per acre.

For experimental purposes paddocks have been sown without nurse crops,.. and that the establishment in these paddocks is not superior to others sown at the same period with a nurse, crop is. the opinion of leading agrostologists who have visited, and compared these fields. This is remarkable when it is considered that yields of up to **60** bushels of oats have been obtained. In passing, it is conceded that good establishment has followed from early autumn sowing,

An. intensive form of controlled grazing has been systematically, followed, and at no period of the year has the grass been allowed to grow beyond that stage when sheep could deal successfully with it - actually growth is never more

than one inch in length. In this connection it has to be pointed out that surplus stock is available from the remainder of the block as yet. unbroken and consequently no provision has' been necessary to conserve growth in the form or hay' or ensilage. When the whole block is brought in, this problem will then arise, At this stage the , effect of consolidation and heavy surface manuring effected by the intensive stocking must be taken into consideration as important factors in the maintenance of a highly productive sward.

In Southland the great majority of sheep-farmers practice "se t" stocking from lambing time until weaning, and in the case of the more progressive, one cattle beast to each twenty ewes is included in order to give the sheep points of re-entry into patches of growth which get beyond sheep control from November onwards. These farmers,' while recognising that' sheep prefer day-old grass, object to the extra labour which would be involved in the shifting of stock from paddock to paddock. Be that as it may, from carrying capacity figures available, these farmers winter the equivalent of' 5 - 7 sheep per acre and fatten three to five lambs per acre, of which approximately 70% are obtained fat directly off the mothers.

The above figures refer to straight out fat lamb production farms' on medium to good country, varying in size from 400 to 800 acres, but on" the Titipua block the ewe lambs are retained to build up the' flock, which is of the Romney breed. However, for comparative purposes, figures have been worked for **790** acres of the older established pasture, and the carrying capacity is equivalent to 7.7 sheep per acre, allowing that five sheep are equal to each cattle beast employed. Specific particulars are that 3,331 ewes produced 3,592 lambs, which may be

considered very good as a big percentage of the flock were young ewes. Of the wether lambs 62% were fattened off the mothers by the end of February. From November to March three cattle beasts to every four acres were added to control the growth and prevent seeding of the ryegrass.

That the production of ryegrass culm is prevented by this method there is absolutely no doubt, but it is a 'moot point as to what stage the number of cattle could be reduced and sheep correspondingly increased and yet obtain the same pasture control. With the younger pastures stocking is reduced by approximately 40% until the second year, in order to allow the maximum of tillering to take Place.

In conclusion, the following points deserve to be emphasised in this transformation of third class into first class land: --

1, The heavy lime applications before and after the establishment of the pasture,

2. The use of certified strains of seed.

3. Efficient grazing control; and

4. Annual phosphatic topdressing.
