

A SOUTHLAND TUSSOCK RUN

In 1939 a survey was made by aeroplane to ascertain the condition of the sheep and cattle in snow; by this method a complete survey, which would otherwise have taken at least 3 or 4 days, was made in 35 minutes.

Health of Sheep

The health of the sheep on the hills is good, but it must be remembered that the hoggets are wintered on turnips and hay and there are approximately 8000 concentrated on the flats during winter. For many years it has been the practice to drench the sheep wintered on the flat three times—in April, at the end of May, and finally in August; this drenching minimises the incidence of internal parasites.

Foot-rot is found to be rather troublesome and there are 4 foot-rot troughs on the run, which are used continually during late winter and spring.

Wintering and Supplementary Feed

When Glenaray was first taken over there was very little flat country available for supplying supplementary feed and the sheep had to be wintered almost entirely on the low tussock country. It soon became obvious to Mr. G. Pinckney that if the carrying capacity of the run was to be increased and his general policy developed, a first essential was sufficient winter feed, at least for the young sheep; the problem was where to grow it. The obvious place was the good, fertile flats of the Waikaia Valley and gradually three farms on the flats adjoining the homestead were purchased, and at present there are about 2000 acres of agricultural land available for wintering the hoggets and some of the wethers. Full use of this land is made throughout the year, and to winter the sheep satisfactorily it is necessary to grow approximately 400 acres of swedes, hard turnips, and chou moellier every year; in addition about 200 acres are sown down to grass every year. The preparation of this land for turnips entails a great deal of work and organisation.

Swedes, Turnips, and Chou Moellier

Breaking up of the oldest lea paddocks intended for the swedes, turnips, and chou moellier crops is begun early in autumn to permit full advantage being taken of winter frosts. Cultivation of this lea ploughing is undertaken as soon as it is possible to get on to the land, and sowing takes place in November, using 4-row ridgers. As soon as the various crops are getting to the 4-leaf stage scuffling begins and scufflers are kept going, as fat-hen and spurrey are troublesome weeds in the turnip and swede crops at Glenaray. In any paddock where it is necessary to grow two turnip crops in succession the preparatory cultivation for the second crop depends a great deal on the conditions at the time; there is no set rule. If, for example, the turnips are finished early, the land may be ploughed and grubbed and worked; if the breaks are late, the paddock may be thoroughly disced and grubbed instead of being ploughed. Another factor to be taken into consideration is the probability and likely severity of club root in the particular paddock or paddocks; in some instances paddocks have been ploughed and worked and



Rams being put through a foot bath.

the second crop ridged in within a week with quite successful results. If possible, turnip land is given an application of up to 1 ton of carbonate of lime before the crop is sown, but here again much depends on the existing conditions, such as weather, transport, and timely arrival of lime, and, of course, the previous treatment of the paddock.

Club root: Club root is troublesome in root crops, but it is impossible to sow the whole of the 400 acres of turnips on land ploughed out of lea; consequently about half this acreage is put in on land which has had turnips the previous season. Though a great deal of thought has been given to combating club root and many different methods of cultivation have been tried, and though experiments with anti-club root fertilisers have been undertaken and liberal applications of lime have been made annually, club root is still a very serious problem.

Feeding off: From weaning in April until they are put on the turnips, which is usually in the first week in June, hoggets graze the grass paddocks and from the first week in June until the grass begins to make some growth, which is usually in October, they are grazed on the turnips and given adequate supplies of hay. The wethers are not put on feed until some time later, depending upon the growth of autumn grass.

Pastures

The arable land on this run is of extreme importance, as not only does it have to provide 400 acres of turnips and similar crops for grazing off in winter, but reliance is placed on the sown-grass lands for supplying sufficient hay to give a reasonably balanced diet during this period of the year, when 28 to 30 degrees of frost is not uncommon and pasture growth stops. Approximately 200 acres are sown down each year, the seeds mixture used being: 15lb. of perennial ryegrass, 5lb. of Italian ryegrass (or, more recently, 10lb. of perennial and 10lb. of short-rotation ryegrass), 4lb. of cocksfoot, 4lb. of timothy, 3lb. of white clover, 3lb. of Montgomery red clover, and 1lb. of crested dogstail. The mixture may be altered according to the situation of the paddock; more timothy and less cocksfoot and perhaps no dogstail would be sown on the very high fertility flats, and other adjustments also made for some of the terrace land. Pasture mixtures are sown broadcast, usually without a nurse crop, except perhaps if the pasture is being sown in the particular paddock where the oats are being grown. For many years pastures were sown in November or December, but recently it has been found more convenient, as far as organisation of work is concerned, to sow them in October, and results are equally as good as with the later sowing.

Pasture Management

No hard-and-fast rule is adhered to in liming before sowing, but if it is found practicable, the land is dressed with both lime and phosphate (superphosphate, reverted superphosphate, or, perhaps, basic slag) before the grass seed is broadcast. Topdressing with lime or superphosphate is carried out either in early spring or autumn as the organisation of other work permits; normally about 400 acres a year are treated. During and since the war it has not been possible to adhere to this programme, and though as much topdressing as possible has been undertaken during the period of shortages, some paddocks, for example, may miss being limed owing to unforeseen circumstances and will then probably receive an application of $\frac{1}{2}$ to 1 ton the following year. Much depends on the condition and age of the paddock. Young grass paddocks are brought into the grazing programme as soon as practicable; there is always stock available, and in the first week in November the paddocks