

Hawke's Bay, Gisborne district, and that between Palmerston North and Taihape, when the forest was felled and the land grassed and fenced the settler's troubles were virtually at an end, as there was little or no secondary growth to contend with, and that which did come away was comparatively easily dealt with. From these lands, therefore, production has been maintained, and the maintenance costs have kept comparatively low, and could in most cases easily be met. In the case of the lands under our consideration the conditions are very different: the running-out of the grasses sown, and their replacement by fern and other rubbish, meant an early reduction in the profits of these lands, and throughout maintenance costs were steadily increasing. Where capital was available and judiciously applied the maintenance costs could be met before deterioration went very far, but on those farms where little or no money was available for maintenance the conditions went from bad to worse.

Any country troubled with secondary growth, and where that secondary growth cannot be regularly burnt, is expensive to get into grass and maintain. To ensure a pasture sward on any hill country the secondary growth, where any appears, must be periodically removed until such time as a close turf of permanent grasses and clovers is secured.

No grass turf will thrive well under dense shade, and particularly is this true of danthonia. On second-class hill country, until secondary growth is got rid of, a danthonia sward undoubtedly should be the objective. This means that in one way and another all shade-making growth must be cleared off. Where possible, the cheapest and quickest way of effecting this is by firing the area. Thousands of acres in New Zealand have been brought into danthonia by means of the firestick. Each fire lets in more light, and the danthonia spreads, and in many cases no reseeding is necessary. In the case of the country under consideration it is not possible regularly to fire the areas, and consequently sunlight has to be let in by more expensive methods—namely, by the use of cattle or with the slash-hook. The danthonia or the brown-top sward existing at the present time on other hill-country areas of the North and in the South Island may be said to have been got very cheaply, and in many instances practically at no cost to the farmer at all. Over the country we are considering the danthonia sward will cost a good deal to become general, because of the cattle necessary, and inability to burn. Also, there is more resowing of seed necessary, and an inclusion of other grasses in the mixture that will tend to cover the ground until such time as the danthonia spreads and becomes general. Danthonia even under favourable conditions is slow to spread, and in very few places has a sward of this grass been secured in under ten years. Sowing of danthonia alone, therefore, is not a sound proposition where the return of secondary growth is rapid. Crested dogstail, brown-top, and lotus major particularly, besides other grasses and clovers, should accompany all danthonia sowings made in the above counties. The seed of certain of these is expensive, which again adds to the maintenance costs of keeping that country clean.

*(h.) Lack of knowledge of local conditions.*

There is no doubt that the peculiar local conditions prevailing in the above counties upset the calculations of many settlers, even those of wide experience in the breaking-in and farming of other hill country in New Zealand—Hawke's Bay, Wairarapa, Rangitikei, &c. The forest indications and the early productivity gave promise that the country would break in well and would rank equal to or better than much hill country in other parts. The settlers went to work and felled the forest, and sowed the same seed-mixture as they were accustomed to in the district of their previous experience. Stocking was carried out in much the same way—namely, largely with sheep—and little fencing was done. Even where areas were well fenced the importance of cattle was not recognized. After some years the English grasses went out, *as they also have done in most other hill country in New Zealand*; but instead of the vacant spaces in the pasture being seized upon by danthonia, brown-top, &c., which has happened in most other hill country, these became filled by pasture weeds, hutiwai, ferns, and scrub. We think failure to foresee this eventuality, and lack of capital to meet the eventuality when it arose, have helped in the present deterioration.

*(i.) High rental values and high unimproved values.*

The overestimation of the capabilities of the country, and the high goodwills paid on transfer since about 1908, have in many cases led to excessive rental values being credited to the land, and in consequence an excessive percentage of the returns that could otherwise have gone into improvements when the secondary growth was in its initial stages had to be swallowed up in meeting rent.

*(j.) Difficulty of providing winter feed.*

The difficulty of wintering stock at the present time, with so much steep country and so much still in the unstumped condition, is very manifest in certain blocks of country that were visited. Failure to carry sufficient cattle over the winter for the spring requirements is a big factor in the country having reverted so badly. The buying of cattle in the spring and having to sell again in the autumn, according to evidence given, resulted in a direct financial loss to the settler. The heavy death-rate of stock recorded in certain places is due in the main to their foraging in dangerous places, as the feed of the safer country gives out during the winter. It is essential that these losses through having to buy in the spring and sell in the autumn should be eliminated as much as possible by growing winter feed on any ploughable areas available, and by conserving feed by shutting up certain paddocks in the autumn.

*(k.) Aspect and steepness of country.*

The shady slopes and the steep, rough places are the first areas on the burn to revert to secondary growth. Both are alike in that stock avoid grazing there while they have access to sunny slopes or to easier country along the foothills.