
FIELD DAY

The Waerenga-o-Kuri Soil Conservation Reserve, approximately 20 miles west of Gisborne, was visited by members of the Grassland Conference during the morning of the field day. Those present when inspecting the large gully were able to appreciate one of the problems of Poverty Bay.

Although Mr Todd, engineer of the Poverty Bay Catchment Board, mentioned that this type of gully erosion was not common in the district, it is typical of some of the more serious slumping in the upper Waipaoa valley. The Waerenga-o-Kuri gorge developed because of drainage being diverted from a neighbouring catchment, resulting in extensive slumping of the highly shattered soils along a large earthquake fault. This had been aggravated by the type of farming practised, and the property of 998 acres was acquired by the Council in 1947 for control of the severe erosion and to demonstrate conservation practices in the district.

After several unsuccessful attempts to control the gully head by structures, water was diverted back to the original catchment and the planting of trees, particularly hybrid poplars, has resulted in some form of stabilisation. About 300 acres of surrounding land have been retired from grazing, and the farmed land has been managed according to the best known method of conservation management. About 150 acres are being devoted to a trial of grazing management in which three types—mob-stocking, set-stocking, and mob-stocking with cattle only—are being compared in relation to their effect on run-off and soil loss as well as production.

Several speakers dealt with the specific features of soil conservation in the district. Mr H. G. Gibbs discussed the peculiarities of the soils on the highly erodible areas, Mr A. D. Todd described the general methods being adopted by the Poverty Bay Catchment Board to arrest the damage to rivers and streams caused by slumping of land, and Mr D. A. Campbell described conservation measures at Waerenga-o-Kuri through which solutions to the district's erosion problems are being sought.

Mr E. H. Kelman, Soil Conservator, Department of Agriculture, Gisborne, has supplied the following notes on work seen at Waerenga-o-Kuri.

Bamboo

A number of bamboo or bamboo-like species have been established in the Waerenga-o-Kuri nursery with the object of testing them for erosion control work when stocks are increased.



Erosion at the Waerenga-o-Kuri Soil Conservation Reserve

The Catchment Boards Soil Conservator has planted some *Arundo donax* in a gully control project at Makarori and it appears that this and similar species may have a place in gully control work *where the gully is fenced off*. The growth rate has been very good-some plants grew 6-8 feet in the first season, which was a drought year. The planting has demonstrated that bamboo can stand salt spray conditions.

It has been suggested that the drought of three years ago killed much bamboo in this district. This was probably not the direct cause. Bamboo sets seed very rarely, say, once in 2.5-35 years, and the parent plant usually dies after seeding. A great deal of bamboo did set seed in the drought year and, of course, the parent plants died afterwards.

Because bamboos are easily damaged by stock there seems little likelihood of bamboo proving useful in most of our erosion control work where gullies are not fenced off.

Pole Planting and Grazing

It is generally thought that only the stock and the pasture need be considered when grazing hill country pasture. In this district where willow and poplar poles for erosion control are planted in areas not fenced off, stock grazing management needs *to* be modified to prevent damage to poles by cattle.

Care needs to be taken in the first spring afterplanting, for it is at this stage that the delicate roots are forming near the ground surface. Heavy cattle rubbing off their winter coats on the poles can then prevent the establishment of these roots. Even although leaves and shoots develop on top of the pole from the stored sap, the pole cannot survive. Care also needs to be taken during the summer to prevent barking or damage to the "tops". This is most likely to occur with younger cattle if feed is in short supply.

There are two main methods to prevent damage. The first is to keep cattle out during the spring, and graze with older cattle in the late summer-autumn period-but they should be watched closely and shifted if they start to do damage.

The second method is to keep the area well grazed with sheep.

In both cases it is advisable to clean up the paddock with cattle just before planting, and as it is not feasible to adopt special grazing over a large part of the farm it is logical to concentrate pole planting in one paddock at a time.

A stop was made at Papatu Station where Mr J. Clarke discussed the management problems of his large hill country property. Here members were greatly interested in a special demonstration drop of a 39 ton load of superphosphate by a Lodestar plane which showed how in this high rainfall area grass is being encouraged to assume the additional role of stabiliser so that land

highly subject to erosion can be kept in production. (See frontispiece.)

Members lunched in the woolshed of Pakowhai Station, the property of Mr G. R. Black, and walked over the ridges to inspect the pastures and view hill country which had been topdressed. As will be seen by the photo, members were favoured with perfect weather, and thanks for hospitality received was expressed by the President prior to leaving Mr Black's property.