

## TREE PLANTING ON HILL COUNTRY . . .

land surface becomes unstable. During heavy rainfall, with the original ground cover gone and bare conditions brought about by constant grazing, the excess water, instead of being soaked up gradually by moss and humus, runs rapidly downhill in many runnels, which join together and cut into the soft soil. Entering the stream at many points, they greatly increase the volume of water carried by the stream-bed. The stream overflows and the excess water sinks into the adjoining banks, making the soil soft and heavy. The local formation is characterised by a covering of sticky clay soil im-

posed on the mudstone underlay with which it never incorporates, and the moisture, percolating from the surface, collects along the line of this stratum, causing a breakaway of the heavy wet soil. This slides downward of its own weight, piling up at the base of the slope to form a hummocky "toe" where the stream cuts round the foot of a hill.

In addition to the slumping movement of the land which is prevalent on this area, the excess water collected in streambeds during the frequent heavy rains causes a physical breaking down and washing away of

the banks, so that the course of any stream is likely to become altered with a big rainstorm.

### History of Planting

A large proportion of the inland area of the station was originally in forest, with the seaward slopes in fern. Manuka was not common and, curiously, it is reputedly difficult to establish manuka as a planted crop on any of the Puketiti area. The bush on the holding was cleared and burnt and the ground grassed down about the beginning of the century, and the area was stocked first with Lincoln sheep and later with Romney sheep and a few cattle.



### KEY TO SPECIES IN PLANTATIONS

1 and 4—*Eucalyptus sieberiana*.

2—*Eucalyptus saligna*.

3 and 5—*Eucalyptus regnans*.

6—*Eucalyptus gigantea*.

7—*Robinia pseudacacia*.

8—Willow plantation (*Salix fragilis* and *S. viminalis*).

9—*Pinus radiata* and *Cupressus macrocarpa*.

10—*Cupressus macrocarpa*.

11 and 13—Oregon pine and redwood, mixed crop.

12—Poplar species trials.

14—*Eucalyptus obliqua* and Lombardy poplar.

15—*Cupressus macrocarpa* and *Pinus ponderosa*.