

where those trees are of small size, to obtain a "site" average; a "species" average must in turn represent all major "sites." It is natural that more thought is being given to accelerated methods of test to cope with the large amount of material now considered necessary to establish correct values.

A considerable amount of time was devoted to structural tests and the resultant stress grades, to testing of plywood, insulating board, and "sandwich" materials, and to laminated construction. In all these fields there is an increasing number of applications calling for strength data. For the re-assembled products methods of test are in the developmental stages; Madison is again able to give the British countries the benefit of its initial studies. Stress grades are a very vexed question, owing to the amount of material which has to be tested to cover the strength variations imposed by defects in all their multiple forms in a range of timber sizes. Those grades too call for changed sawing methods and a high degree of skill in grading.

J. S. REID.

REGENERATION IN INDIGENOUS MONTANE FOREST AFTER FIRE

A fire in silver beech forest on the Marchant Ridge (southern end of the Tararua Range) in January, 1938, completely destroyed the forest at an altitude from 3,400 feet down to about 2,800 feet. Re-population of the burnt area 11 years later is surprising slow, for there are abundant winds to carry seed from the living forest. Mosses and ferns are the principal ground cover, except close to the edges of the burn where young silver beech (*Nothofagus menziesii*) trees are numerous. Towards the centre of the burn a few isolated silver beech, kamahi (*Weinmannia racemosa*) and *Olearia lacunosa* seedlings (presumably from wind-carried seed) were seen, but *Coprosma*, *Fuchsia* and broadleaf (*Griselinia littoralis*) from bird-carried seeds are much more numerous. Incidentally a few small broadleaf trees survived the fire; towards the lower fringe of the burn one or two silver beech retained living branches some 6 to 10 feet above ground. It is possible that both instances of survival were due to their being between the crown and ground fires.

J. S. REID.

REGENERATION IN INDIGENOUS FOREST AFTER BLOWDOWN.

The very severe storm which devastated some areas of forest in the Tararua Ranges 13 years ago has been commented upon in the Journal.* A lesser storm 2 years ago brought a further small amount of blowdown in the devastated areas.

In the montane beech forest association (about 3,000 feet) on the Field Track ridge from Otaki Forks to the southern Tararua tops,

*"An Exceptional Gale" and "The Recovery of an Indigenous Forest after Wind-throw," both by A. P. Thomson, *N.Z. Journal of Forestry*, Vol. 4, No. 1, 1936.—Ed.

blowdown was practically complete in some areas. The capacity of kamahi to survive when only a small proportion of its root-plate is adhering to the ground has been remarked previously, so too has the development of epicormic branches. It is interesting to note that silver beech has also survived and produced epicormic branches in a few instances; elsewhere some trees continue to live in the prostrate position. However, the most interesting feature of the association is the abundant stocking of silver beech seedlings especially on exposed mineral soil. A small stocking of red beech (*Nothofagus fusca*) seedlings is surprising, as the altitudinal range of the species is characteristically lower in this part of the ranges. In the new forest it appears that kamahi will fulfil a lesser role than it did in the forest prior to the blowdown.

In the mixed broadleaf-podocarp forest association at lower altitudes on the Field Track ridge, blowdown was less complete, but most of the top storey rata and rimu were destroyed. *Suttonia salicina*, hinau (*Elaeocarpus dentatus*), *Wintera axillaris* and tawa (*Beilschmiedia tawa*) have regenerated vigorously, and a heavy stocking of miro (*Podocarpus ferrugineus*) has resulted, in part from the stimulus given to seedlings existing at the time of the blowdown by improved light, and in part from abundant seedlings on exposed mineral soil. It is not clear yet what part rimu (*Dacrydium cupressinum*) will play in the new forest; young trees are not much in evidence in the completely blown-down areas but are very abundant under the rather sparse canopy of kamahi at slightly higher altitudes. Under the last-mentioned conditions miro and totara (*Podocarpus totara*) are also numerous.

J. S. REID.

DAMAGE BY KAKA IN RIMU FORESTS OF WESTERN SOUTHLAND

During the course of Forest Survey work in the coastal pole rimu (*Dacrydium cupressinum*) forests in the Waitutu and Hakapoua Survey Districts of Western Southland, many green rimu were noted unusually scarred. These scars, which have been observed on trees of all size classes from six inches in diameter upwards, are usually long horizontally and narrow. The width varies from half to three inches with a length from two to twenty inches, so that smaller trees may be almost completely girdled. A single tree might bear twenty or thirty such scars. The bark is cut off cleanly exposing the wood but the latter is not torn to any extent.

The scars are in every way comparable with those found on partially decayed silver beech (*Nothofagus menziesii*) and known to be caused by kaka (*Nestor occidentalis*) in searching for grubs and larvae.