

In State Forest No. 57 in the Aria Survey District of the northernling Country, at about 500 feet, on what may be termed the north-eastern extremity of the Waitaanga beech forest, there is a small alley of rimu (*Dacrydium cupressinum*), tanekaha (*Phyllocladus ichomanoides*), miro (*Podocarpus ferrugineus*), kahikatea (*P. acrydioides*), totara (*P. totara*) and matai (*P. spicatus*) with a second storey principally of tawa and tawhero (*Weinmannia racemosa*). On the sides of the ridges 50 feet above the valley bottom there is a sudden change to typical red beech (*N. fusca*) forest varying from mature trees to saplings. Scattered throughout the beech are tawa saplings and seedlings, but no accompanying parent trees, demonstrating that this species is invading the beech owing to its greater shade tolerance.

This is the only example of tawa invading beech, indeed of tawa displacing beech, that the writer has observed. It would be interesting to know of any other cases.

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## WIND DAMAGE IN CANTERBURY.

The gale which struck Canterbury about 11 a.m. on Friday, 13th July, 1945, was the most disastrous on record. At Wigram Aerodrome there were several gusts of 80 m.p.h. registered and the peak was 90 m.p.h. at a little after mid-day. However, the rarity of velocity recording anemometers meant little information on actual velocities elsewhere. The gale was a nor'-wester.

The area affected extended from Waimate in the south to Leslie Hills (the southern lip of the Hammer Basin) in the north. The quantity of timber involved has been estimated at 90,000,000 board feet, of which 70,000,000 were classed as millable. This figure does not include small lots nor large areas damaged up to 20 per cent. The greater part of this volume was located in the Selwyn Plantation Board areas (36,000,000 bd. ft.) and Balmoral State Forest (30,000,000 bd. ft.), but the balance was spread fairly generally.

The nature of the damage was in most cases complete uprooting with the tops pointing generally to the south-east. There was a varying degree of top breakage which seemed to be greater where the soil was deeper, as near Coalgate, and where early thinning had been carried out, as in the oldest *Pinus radiata* compartment at Balmoral. But damage of one sort or another occurred irrespective of soil type, thinning or, with one or two exceptions, species—the gale was of such force that almost anything in its course suffered.

The species chiefly affected was, of course, *P. radiata*—it forms the bulk of the plantations in Canterbury. The older age classes above 35 feet in height were the chief sufferers—only occasional damage occurred in younger or smaller stands. Other species that were considerably damaged were *P. banksiana* and *P. murrayana* at Balmoral Forest; Douglas fir, *P. ponderosa*, larch, spruce and

eucalypts in the Coalgate district; native podocarps (rimu, matai and kahikatea) in an isolated remnant of native bush at Geraldine; larch, spruce, *P. ponderosa* and Austrian pine at Raincliff Forest.

Trees that showed practically no damage were the cypresses and, to a lesser extent, cedars.

It would have been decidedly interesting to have had reliable local records of the velocity of the wind at its peak. Information is needed on the velocity of wind that can be withstood by trees in various sites and the replacement of the ordinary cup anemometer by instruments recording wind intensity is highly desirable.

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## REVIEWS.

**Introduction to Forestry.**—Study Course, Army Education Welfare Service, New Zealand. pp. 83, figs. 23, paper covers, Government Printer, 1944.

The preface to this booklet states that it is intended to serve as an introduction to the subject, and aims at presenting, simply, the objects and methods of forestry as practised in the Dominion. In some 80 pages of letterpress, of which approximately 13 are taken up by figures and illustrations, it covers the evolution of forestry, the tree, the forest, silviculture, protection, measurement of wood, management, harvesting the crop, conversion and processing of timber, and properties and uses of wood. Inevitably it suffers from the compression necessary to contain so ambitious a scope within such a small compass, and the concentrated knowledge offered must appear somewhat difficult of digestion to a beginner.

The treatment of different branches is distinctly uneven, varying from the elementary nature which appears appropriate in an introduction to the assumption of a considerable degree of prior knowledge of cognate subjects. Thus in the chapter dealing with The Tree, the functions of root, stem and crown are explained in a manner suitable for readers with no botanical knowledge. In the chapter on Silviculture on the other hand the student is told that he must have previously studied at least plant physiology, taxonomic botany, ecological botany, mycology and, though less intensively, entomology, ornithology and pedology (science of soils); it is assumed that he is "sufficiently well acquainted with their nature to understand their bearing on silviculture"; it is further assumed that he has studied horticulture for tree nursery purposes.

It is no doubt right and proper to acquaint those contemplating forestry as a career with the wide variety of knowledge requisite for full technical competence, but one can hardly repress a wondering