

WIND DAMAGE IN THE MANAWATU AND RANGITIKEI DISTRICTS

During the night of the 14th February, 1947, and the morning of the 15th, a southerly gale was experienced over the southern part of the North Island. It struck with greatest force along the west coast between Paekakariki and Wanganui. The maximum wind velocity recorded at Ohakea Aerodrome was 93 m.p.h. This aerodrome was towards the eastern edge of zone of greatest damage and it seems likely that even stronger winds developed along the coast.

The area principally affected is sandy country in which *Pinus radiata*, the chief forest and shelter tree, is deeply and strongly rooted, except where the water table or beds of clay or gravel are near the surface. Primary wind damage was not in the form of general uprooting,* but rather stem breakage at various heights from within a few feet of the ground; where uprooting occurred it was generally in "drives" initiated by breakage of a tree or trees on the windward margin.

In one stand of 20-year-old *P. radiata* thinned for the first time during the preceding two years, an area of about 20 acres was flattened except for broken stumps.

A feature of the gale in this coastal area, where sand ridges run inland for several miles in an easterly direction, was that in the broader belts of trees the greatest damage occurred on the lee of such ridges.

In addition to actual breakage and uprooting, the whipping of tree crowns, while the cambium was active, resulted in a significant amount of barking leading to death of the tops.

Inland the only significant damage noticed was on Karioi State Forest, south-east of Mt. Ruapehu. This forest seems to have been in the line of maximum intensity on the coast and, at high altitudes, the gale was accompanied by a sharp heavy snowstorm. Severe damage was confined to the upper part of the forest where above 2,750 feet breakage of the current season's leading shoots and upper laterals occurred. The damage was greatest on *P. laricio* and *P. sylvestris*; *P. ponderosa*, *P. murrayana* and Douglas fir were less affected.

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* See *Wind Damage in Canterbury*, N.Z.J. For. Vol. V, No. 2, 1945. p. 154; also *An Exceptional Gale*, *ibid.* Vol. IV, No. 1, 1936, p. 32.

THE PLANIMETER FOR COMPUTING SAMPLE TREE VOLUMES.

The writer has lately been making considerable use of the planimeter for sample tree volume calculations and increment studies, and has found the method so rapid that it seems worth passing on.

The use of the planimeter in computing tree volumes is mentioned in Bruce & Schumacher's *Forest Mensuration*, and it seems a logical step to apply it to increment determinations.