

# Note on Snow Damage, Tararua Range, July, 1965

A. P. Druce

DURING a recent visit to the Tararua Ra. (August 1965) an unusually large number of freshly broken branches of trees were noticed lying on the ground. On most of the branches the foliage was still intact; only occasionally had the leaves begun to fall or been browsed. Though damage was widespread, it was particularly evident on the steep north-facing slopes of the Waiohine V. between Totara Flats and Hector Forks. The altitude in this area is only a little over 1000 ft. The vegetation is of three main types—mahoe forest on unstable greywacke debris, (rimu-rata)/kamahi forest on stable greywacke debris and black beech forest on massive greywacke. In a few places the track to the forks was completely blocked by fallen branches: most common were the branches of mahoe; less common were those of kamahi, northern rata and hinau. Others noticed here and there were those of lancewood, heketara, pigeonwood and horopito. Tangled masses of supplejack were also lying on the ground.

At higher altitudes, on Cone Ridge and elsewhere, there were a good many branches of silver beech and red beech. There were also branches of kamahi, toro and broadleaf. Near the summit of Cone, at about 3,400 ft. in short silver-beech forest, some of the surviving stems of leatherwood (*Olearia colensoi*)—surviving because they were out of reach of deer—had been broken or were lying semi-prostrate.

This widespread breakage was undoubtedly caused by the heavy snowfall at the beginning of July. Dr. R. J. Jackson has informed me that he noticed many branches of beech trees on the ground along the track from Dobson's Hut to Mt. Marchant the weekend after the snowfall. Such snow damage to the crowns of trees is one of the contributing factors leading to the opening up of a forest canopy. Zotov in discussing the ecology of the Tararua mountains (*Trans. Roy. Soc. N.Z.* 68) reports (p. 270) on a heavy snowfall of August, 1932, as follows: "It was especially calm on the last day of the fall. Consequently a large volume of snow was caught by the branches, and its enormous weight snapped great boughs and occasionally completely stripped large trees of their crowns, forest in the warm temperate belt suffering particularly severely. This effect of snow, although on a small scale, is quite common in the cold temperate belt in fairly sheltered localities. Thus, about Mount

Continued on page 21

very large specimen grew on a totara; none have been seen lately.

South of the main bush there is an adjoining area, very stony, in which the totara are smaller and do not form a closed canopy. *Coprosma rhamnoides* is abundant here, and there is a good deal of *C. rigida* and *Pseudopanax anomalum*. There is also a patch of *Urtica ferox*, an uncommon plant in this district. Where trees do not predominate there is a poor pasture with manuka, kanuka and saplings of totara scattered through it. A few shrubs of matagouri and *Pomaderris ericifolia* used to be present. In the pasture the following herbs are to be found: *Notodanthonia penicillata*, *Microlaena stipoides*, *Nertera setulosa*, *Dichondra* sp., *Carex breviculmis*, *Microtis unifolia*, *Thelymitra longifolia*, *Cyathodes frazeri*, *Geranium potentilloides*, *Luzula* sp., *Wahlenbergia* sp. and two species of the *Gnaphalium collinum* aggregate. Others recorded in the past include *Botrychium australe*, *Drosera auriculata*, *Orthoceras strictum* and *Chiloglottis cornuta*.

Although the totara forest at Ohau is very similar in structure to that on the Otaki plain (described elsewhere in this issue) it differs significantly in composition. The following trees found at Otaki do not appear to be present at Ohau: karaka, ngaio, akeake, wharangi and milk tree (*Paratrophis banksii*). These are species usually thought of as being coastal, though the first three occur inland, where they are usually associated with young soils and steep slopes. However, the main difference in composition between the Ohau and Otaki forests is seen in the assemblage of small-leaved shrubs. *Coprosma crassifolia*, so conspicuous in the understorey at Otaki, is absent from Ohau; and *Melicactus micranthus*, *Pseudopanax anomalum* and *Coprosma rigida* so conspicuous at Ohau are absent from Otaki. *C. rhamnoides* is abundant at Ohau, but rare at Otaki. As all these shrubs have fleshy fruits, suitable for dispersal by birds, it does not seem that the difference between the two forests can be related primarily to differences in seed supply. The fact that the Ohau terrace is only a few feet above river level, whereas the Otaki plain is 30 ft. or more, suggests that a difference in the moisture available from seepage may be mainly responsible for the difference in composition.

---

Continued from page 13

Alpha Hut trees stand well spaced, often with almost bare trunks except for the small surmounting crowns." In the absence of browsing animals, gaps in a canopy are normally filled in time by one species or another. In the Tararua Ra. at the present time there is very little regeneration of canopy species within the forest, so that every loss to the canopy, whether caused by wind or snow damage, browsing, or disease, leads to further deterioration of the protective cover.