

minor repairs were needed on each occasion, there being no evidence of pigs or deer having gained entry.

The earliest record of the liberation of deer, and of their breeding, in the Nelson Province is 1861, but deer were not present in large numbers in this particular locality until the beginning of this century and more especially the last thirty years. The control plot fairly represents the condition of a large block of forest between Korere and Tophouse, known as "The Big Bush." In this predominately beech forest, overmature red and silver beech form a canopy over an understorey of suppressed pole-size beech, with but sparse regeneration in the thicket and sapling stage. This regeneration is almost exclusively silver beech of poor form, while there is virtually no seedling beech. In addition, other palatable species such as broadleaf and *Coprosma* spp. are absent or heavily browsed; so much so that in places the forest has a park-like appearance. Within the fenced plot regeneration is not prolific because of heavy canopy, but in small areas where light is available there is ample growth, almost wholly of red beech up to 15 feet high and of excellent form. Some silver beech is present in the more moist and shaded sites and is of much better form than that subject to browsing outside. Recent regeneration of both species is to be found. It is very noticeable that where a break in the canopy extended over the fence there is beech regeneration, with *Coprosma*, lawyers and broadleaf inside the plot, but not outside. Moreover, branches which protruded through the fence were eaten back.

It is evident that deer damage in this area is much more serious than previously believed. This set of plots provides factual and visual evidence of the gradual effect of deer in 25 years. The composition of the forest is being altered for the worse and its survival as a manageable proposition is being made a matter of speculation in the event of the deer population increasing, or even remaining at its present high level.

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BEETLE DAMAGE TO BEECH FOREST

As early as 1923 damage to *Nothofagus* species by a buprestid beetle was reported at Pokaka, near Mt. Ruapehu in the North Island. This insect was subsequently identified as *Nascioides enysi*, and has since been found in other beech forests, notably in the Maruia Valley of the Nelson Conservancy.

The larva is about 17mm. long, whitish-yellow to pale brown, and readily distinguished by its very small head but greatly enlarged prothorax. The first indications of larval attack are black ramifying lines in the inner bark, where the larvae feed, forming flattened tunnels which end in pupal chambers in the wood. In the chamber the imago expands, the change from pupa to adult taking some ten days. The adult is approximately 10 mm. long, of a greenish metallic colour

with four prominent brown spots on the elytra. Although a sluggish beetle, it may be noted active in flight during the mid-day heat of summer months.

Epidemics are known to occur at intervals in beech forest where some agency has affected the vigour of the trees and has been responsible in particular for root damage. Drought, silting, flooding, earthquake and fungi are recognised as such causal agencies.

Concern is being felt at the epidemic nature of the attack in the forests of the Maruia, where root disturbance due to the 1929 Murchison earthquake may have been the primary predisposing factor of high insect populations prior to this present one. Local observers have noted that the damage has increased rapidly in the last three or four years. On the west bank of the Maruia River near Woolley Creek, at least ten square miles of forest have been seriously affected, while other areas, State Forest, Crown Land and Scenic Reserve, are deteriorating along the whole valley. One fine 120-year-old stand near the Maruia Springs Hostel, of red beech averaging 75 feet merchantable height and 24 inches in diameter, is being severely attacked, at least one-third of the trees being dead or dying, whereas five years ago the stand was in a healthy condition.

Fortunately in this locality re-establishment of such damaged forests presents no silvicultural difficulties ; advance growth of beech already exists and only requires releasing by removal of the merchantable overwood. However, some of the best stands are in Scenic Reserves and so recognised as inviolable, though they are in danger of becoming scenic eyesores.

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