

As well as herbs (List 9) various woody species occur in *Danthonia* tussock, but there is no definite scrub belt. In fact lists 8, 9 and 10 overlap considerably and may be considered together. Scrub species (List 10) tend to become more frequent towards forest margins, and in some saddles at comparable altitudes, as for instance Ignimbrite Saddle, scrub is dominant, but this is not general. An unusual feature on the eastern slope of the Middle Range is the occurrence of *Olearia nummularifolia* projecting above the tussock as a 10ft tree at an altitude of over 4,800ft. The complete absence of *Celmisia incana* which occurs on the volcanoes and is also a prominent component of both tussock and open ground communities in the Kaweka and Ruahine Ranges is inexplicable.

CENTRAL KAIMANAWA, CLIFF AND SCREE

Neither situation is common. *Ranunculus insignis* and *Aciphylla colensoi* only flourish on sites inaccessible to deer and hence are mainly confined to cliffs, though small, close-browsed rosettes of the former persist as elsewhere on stable scree surfaces.

On screes *Myosotis australis* and *Parahebe spathulata* are local, *P. hookeriana* var. *olsenii* or more doubtfully *P. hookeriana* and *Epilobium glabellum* are common. *E. pychnostachyum* is rare but has been observed in a few localities from 1947 onwards. This species may be extending its range.

CENTRAL KAIMANAWA, BOG AND WATERCOURSE

There are no high altitude bogs of any significance, but on saturated ground bordering watercourses such species occur as *Caltha novae-zealandiae*, *Drosera arcturi*, *Gunnera dentata*, *Plantago uniflora*, *Hydrocotyle novae-zealandiae*.

SOUTHERN KAIMANAWA

To the south of the Central Kaimanawa Ranges lies open country known as the Inland Patea, and to the east the open country of the Taruarau and Ngaruroro, which is vegetationally a continuation of it.

It is convenient to take the line of the Inland Patea Road as the boundary of the Kaimanawa area since the southern boundary of the Inland Patea tussock with the podocarp forest of the lower Rangitikei has been obscured with the conversion of forest to farmland.

Within this boundary, as has already been explained, the south-western portion between Waiouru and Moawhango Village is being separately considered as the South-western Kaimanawa.

This leaves an arc of open country extending east from the Desert Road near Waiouru across the upper Moawhango basin and the Ngamatea Plateau north to the Oamaru Saddle in the upper Ngaruroro.

The whole of this area has been grazed from the earliest days of European occupation, though much of it is now abandoned, and practically the whole of it has been affected by fire from the 1870's onward, and some at least as early as the 1850's. Burning is still carried out in the stocked areas and deterioration of the cover over the past 25 years is widely apparent. Islands of beech forest occur throughout, many of which have been swept by fire and regenerated within the last 80 years.

SOUTHERN TUSSOCK AND GRASSLAND

Tussock grassland dominates the whole area, but as altitudes range from over 5,500ft on the Motumatai Range to 1,800ft where the Inland Patea Road crosses the main valley, *Festuca* or *Poa* may dominate the lower levels, while snowgrass occurs on the higher ground. Between these limits wide expanses of red tussock are characteristic.