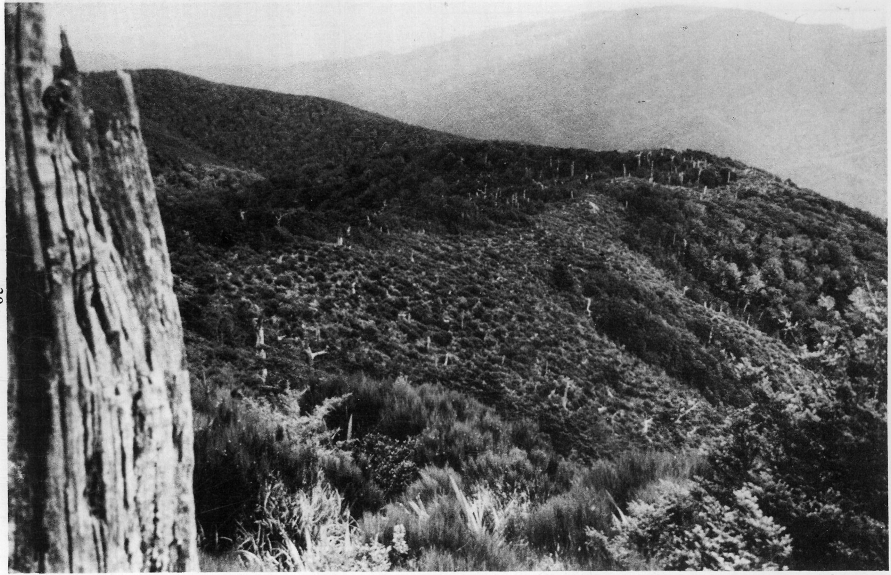

Fig. 1—The summit of Mt. Reeves, looking northwest, showing fire margin, *Dracophyllum filifolium* and *Astelia nervosa* in the foreground.

Photo: P. C. Kennedy, February 1977.

Mount Reeves

M. C. Macdonald, Wellington

The summit region of Mount Reeves, Southern Tararua Mountains, was studied by D. R. McQueen in 1948-49 (*Wellington Botanical Society Bull.* No. 23). The aim of his work was to elucidate the pattern of vegetation succession after a fire in 1890 removed the silver beech forest cover from the summit and six radiating spurs.

In February 1977 a brief visit was made to the summit of Mt Reeves by members of the Society in an attempt to relocate transects used in the 1948-49 study and to assess what changes had occurred to the plant communities during the last 27 years.

McQueen resolved the summit area into three main aspects: the northwest face, the south face, and the northeast spur. One transect at each aspect was approximately relocated and species abundance recorded by the plot procedure used by McQueen ($2m^2$ quadrats located at 10m intervals along the transects). Plant species were recorded on a 1-4 abundance scale for each quadrat (1 — rare, 2 — occasional, 3 — frequent, 4 — abundant). The dominant plant of the transect was revealed by summing the quadrat totals. To lessen individual bias four people recorded the species abundance for each quadrat.

The results of the 1977 survey are presented in tabular form together with the comparable data recorded by McQueen in his thesis. Because the unmarked 1948-49 transects could not be accurately relocated, conclusions have been restricted to assessing the changes that have occurred to the more common species along the approximate lines of each original transect.

The northwest face contained a sheltered and an exposed region which the transect traversed. *Gaultheria* species were less evident in 1977 on this transect. Kamahi is now the dominant plant, and the unnamed mountain *Coprosma* (aff. *C. parviflora*) has declined in importance.

The second transect to be relocated was on the gentle sloping area of the southerly face. Small seepage areas were observed by McQueen to be common on this face with *Lycopodium fastigiatum, Juncus antarcticus, Euphrasia cuneata, Gentiana* sp. and *Blechnum penna-marina* associated with these areas. Kamahi is not important on this face.

The transect on the northeast spur off Mt Reeves also contained an exposed and a sheltered region. A number of species which McQueen recorded as frequent in 1948-49 in the exposed section of the transect were not observed in the quadrats of 1977; these were *Coprosma colensoi, Gaultheria antipoda, G. antipoda* × *G. rupestris, Chionochloa cheesemanii, Notodanthonia gracilis, Carpha alpina* and *Scirpus aucklandicus*. McQueen also recorded red beech regeneration in the sheltered region of pole silver beech regeneration

	NORTHWEST				SOUTH		NORTHEAST			
	exposed		sheltered				exposed		sheltered	
	49	77	49	77	49	77	49	77	49	77
Nothofagus menziesii			f	a			f	o	a	d
Weinmannia racemosa	a	d	d	a			o	d	d	o
Coprosma colensoi (incl. *C. banksii*)			a				f		a	
C. foetidissima	f	f			a	o	f	f	f	o
C. sp. (aff. *C. parviflora*)	d	o	a	f	a	f	a	a	f	f
Cyathodes fasciculata	o	o	a	o	f	o	o	o	a	o
Dracophyllum filifolium	a	a	a	d	a	f	d	d	d	d
Hebe stricta var. *atkinsonii*	f		d	o	f	o	o		f	
Gaultheria antipoda	f		a		f	o	f		a	
G. depressa var. *novae-zelandiae*	f		o							
G. rupestris	a		a		a	o	a		f	
G. antipoda × *G. rupestris*	f	o	f		f		f		f	
Lycopodium scariosum		d		o	a	d	f	o	f	o
Blechnum capense agg.	f	f	a	a	a	o	f	f	a	d
B. procerum		f				f		f		
Chionochloa cheesemanii	f		f		a	o	f		f	
Notodanthonia gracilis	f		f		o	o	f		f	
Carpha alpina					a	f	f			
Scirpus aucklandicus					a	o	f		o	
Juncus gregiflorus	o		o		f	o	o		a	
Luzuriaga parviflora	o		f		o	o	f	o	f	
Astelia sp. (aff. *A. nervosa*)	a	o	a	f	d	f	a	f	a	f
Phormium cookianum	a	f	a	f	a	f	f	f	d	o
Carpodetus serratus	f								f	
Total no. spp.	**39**	**17**	**42**	**13**	**52**	**20**	**39**	**13**	**42**	**11**

d — dominant, a — abundant, f — frequent, o — occasional.

on the northeast spur, but red beech was not present in the 1977 quadrats.

The overall impression upon reaching the summit of Mt Reeves in 1977 was that there had been no advance in plant succession since the late 1940's. This view was borne out by Dr D. R. McQueen, who agreed that the shrub area photographed in 1977 (Fig. 1) had changed little since 1949.

Structural details of the vegetation were not recorded in 1977 but it would appear that there has been little (if any) change in the height of the plant communities. Kamahi exhibited the same procumbent form previously described by McQueen and still only attains a maximum height of 1m. The *Dracophyllum* shrubs were about 0.75-1m tall in 1977.

In 1977 the overall number of different species recorded from the transects was considerably less than recorded in 1948-49, but sixteen species were recorded for the first time. Some of this apparent change may be due to site variation between the 1949-49 and the 1977 quadrats. The *Gaultheria* species and hybrids seem to have fared poorly over the last 28 years. They are no longer significant plants of the N.W. and the N.E. faces and are only occasional on the southern face. *Chionochloa cheesemanii* which was frequent and locally abundant on the N.W. and N.E. faces respectively was not located in the 1977 plots, and only occasional heavily browsed specimens were recorded on the gentle southern face.

It seems that the vegetation of the southern face which is now dominated by *Lycopodium scariosum* has degenerated from the *Astelia*-sp. dominated community to a more open plant association with many regions of exposed mineral soil and a poor covering afforded by *Carpha alpina, Epilobium pernitens* and *Juncus antarcticus*.

It is suspected that animal browsing has contributed to the degradation of the vegetation, as palatables are not a feature of the regenerating cover and animal sign is present on the summit region.

The study confirms the fragile nature of the upland silver beech forest ecosystem of the Southern Tararua Mountains. Regeneration of the vegetative cover from 1890-1949 was slow and there has been no noticeable advance in vegetation succession during the last 28 years. In fact there appears to have been a degeneration in some areas of the Mt Reeves summit where plant cover has decreased and soil exposure has increased.

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