Conclusion

Each one of the three mountains of the park has its own distinctive features: each is in effect a distinct, albeit small, botanical district. These differences reflect the linear sequence of volcanic activity from the older, highly dissected remnant volcano Kaitake to the young, recently active cone Mt Taranaki (see Geology, landforms, and volcanic history). The form and degree of dissection of each mountain, and the time elapsed since the last eruption or debris flow, largely determine the combinations of plants present.

Soil development is a continuing and most important influence on plant succession on the mountains. Eruptions or debris flows provide fresh surfaces for plants to colonise, or rejuvenate existing soils by the addition of tephra. With lack of disturbance soils become leached and impoverished, especially those on gentle slopes or flat ground. In response certain plants establish, compete for, and modify habitats, and eventually decrease in abundance and range or are completely superseded by others that appear as soils mature.

On Mt Taranaki, much of the vegetation is readjusting in the wake of very recent disturbance or destruction, whereas on Pouakai the vegetation has been less disturbed in recent times. On Kaitake, human activity (see Human activity ...), rather than volcanic disturbance has been the predominant cause of changes in the last few hundred years.

The long history of disturbance and the isolation of these mountains from other higher ground has resulted in the absence of a great many plant species (see Flora) and is probably the reason for the exceptional abundance of kamahi and leatherwood over large areas of the park.

Although this century has been relatively uneventful in terms of landscape change in the park, this cannot be expected to continue. Major changes associated with the continuing rapid natural erosion will occur, especially on the steep upper slopes of Mt Taranaki. And the even more dramatic genesis of fresh surfaces or rejuvenation of soils by volcanic eruption cannot be ruled out.

The main botanical importance of the park lies in the long term prospects of survival it offers a range of indigenous plant communities and the opportunities to study their evolution in an environment of continual volcanicity. Tongariro National Park is the only other park in New Zealand where this is possible, and there, many pertinent influences are, or have been, significantly different.

Wild animal control will be a continuing problem for park managers and will require unrelenting pursuit and adequate funding. Research into effective hare control measures is very necessary if long-term changes in the composition of some of the tussockland vegetation are to be averted.

Plate 17 Alpine gravelfield, stonefield, boulderfield, and rockland

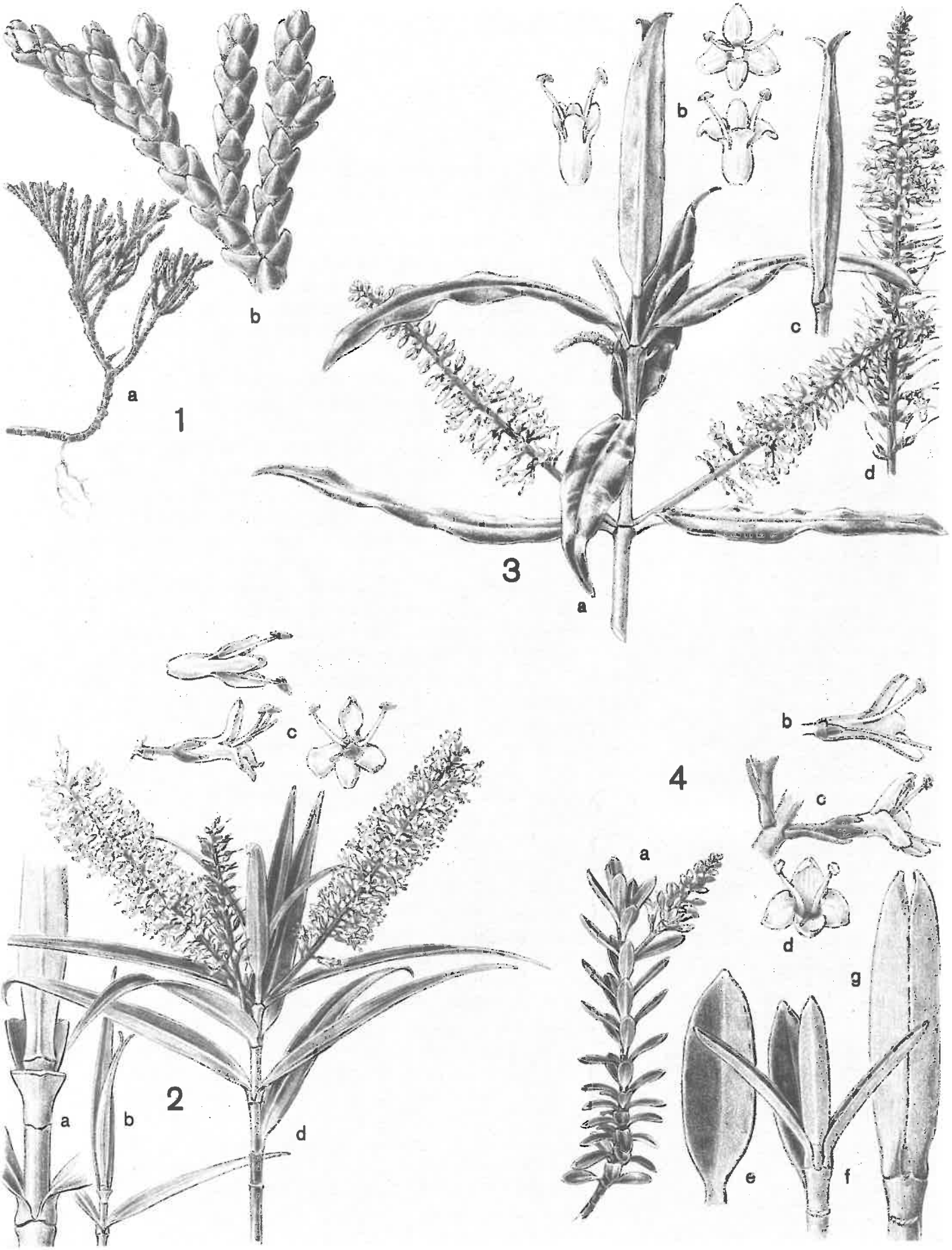
1 *Polystichum cystostegia*.
a single frond ×0.8.
b underside of pinna showing sori ×10.0.
c sorus cut to show sporangia ×12.0.
d underside of pinnae showing sori ×4.0.

2 *Colobanthus* sp. unnamed.
a leaf arrangement, flower, and capsule ×4.0.
b flower ×8.0; cut away to show structure.
c top view of capsule ×8.0.
d cross-section of capsule showing seeds ×8.0.
e cushion habit of plant ×0.8.

3 *Poa novae-zelandiae*. habit of plant ×0.8.

4 *Carex pyrenaica* var. *cephalotes*.
a whole plant ×0.8.
b spike with mature utricles ×4.0.
c spike with immature utricles and male flowers ×4.0.
d utricle; also cut to show nut ×12.0.

5 *Montia calycina*.
a top view of flower ×4.0.
b leaf and flower arrangement ×3.0.
c capsule ×4.0.
d habit of plant ×0.8.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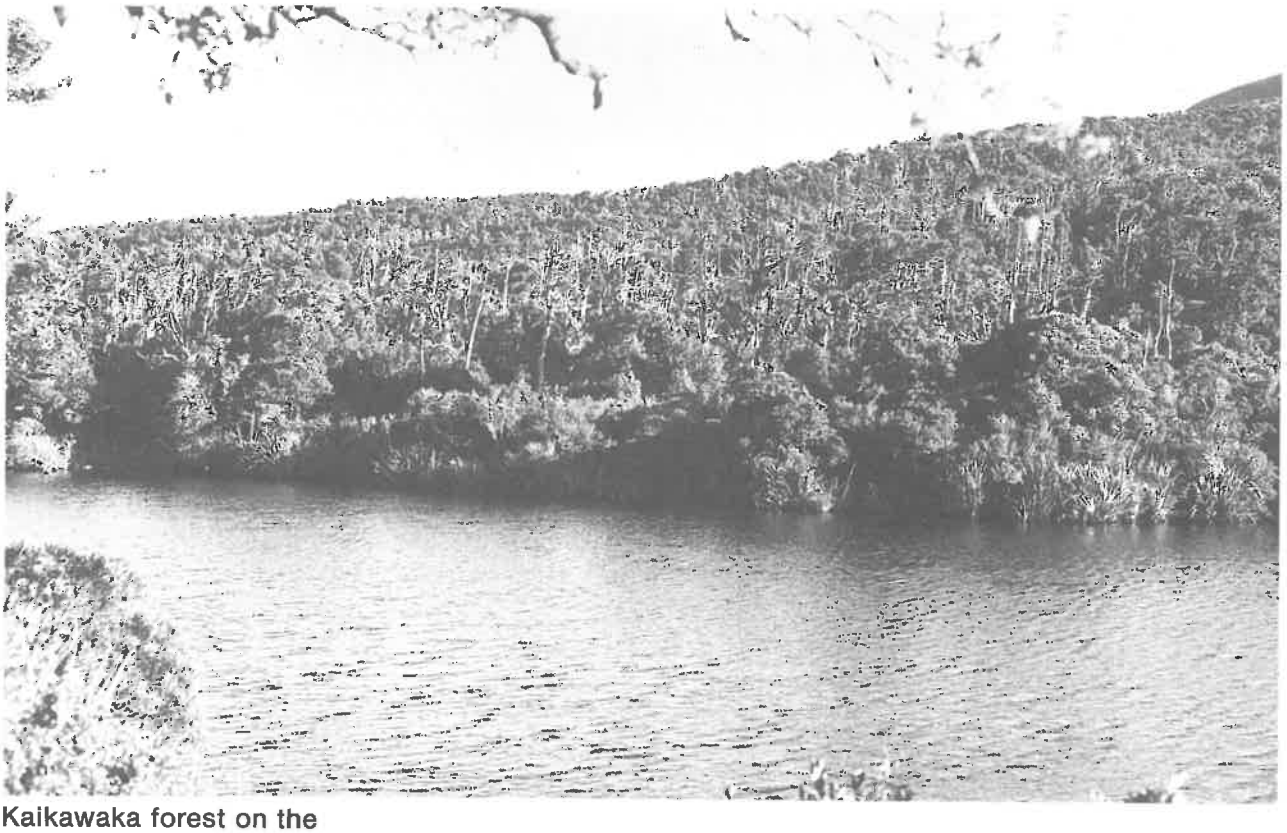

Kaikawaka forest on the northern shore of Lake Dive.

M.R. Boase.

Plate 18 Hebe spp.

1 *Hebe tetragona* var. [*H. subsimilis* var. *astonii*].
a branch ×0.6.
b twig ×3.0.

2 *Hebe* "egmontiana" [*H. stricta* var. *egmontiana*].
a part of twig showing leaf arrangement ×1.5.
b apical shoot ×0.6.
c side, top, and front view of flower ×1.3.
d flowering branch ×0.6.

3 *Hebe macrocarpa* var. [*H. corriganii*].
a flowering twig ×0.6.
b front and top view of flower ×1.3.
c apical bud showing sinus ×0.6.
d raceme ×0.8.

4 *Hebe venustula*.
a flowering twig ×0.6.
b vertical section of flower ×2.5.
c flower showing attachment ×2.5.
d flower front view ×2.5.
e leaf ×1.5.
f apical bud ×1.5.
g apical bud with leaves cut away to show sinus ×2.5.

The conflict between recreation and preservation will certainly increase as more and more people visit the park and make demands for more facilities. Some problems may be avoided if park managers zone and accord special protection to areas of high scientific importance and landscape of great natural beauty. The zoned areas must be guarded against development or over-use.

The park's native vegetation needs also to be viewed in a regional and national context. In the case of lowland and semi-coastal forest types, the park contains the only substantial stands remaining on the volcanic ringplains following extensive clearing for pasture. By the time this account is published Egmont National Park may be complemented by the gazettal of the Wanganui River National Park, comprising mainly sedimentary hill country forests. The two parks will be the mainstays of the Taranaki Land District reserves network. There need be no room for complacency however, for even these major reserves do not embrace a representative sample of the original landscape and vegetation of Taranaki. Some of the gaps could be partially or completely filled by reservation of the areas identified by recent surveys of the district (Clarkson and Boase 1982; Bayfield and Benson 1986; and Bayfield *et al.* 1986). But because of continuing pressure for development or exploitation, and unchecked wild or domestic animal damage throughout most of the remaining forest in the Land District, such opportunities for reservation are diminishing.

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Flax stands on the Lake Dive shore and wind-shaped kamahi-mountain totara forest on Beehives.
M.R. Boase.

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