

# Moa Park, Abel Tasman National Park

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MOA Park (formerly Moor Park) is a natural tussock-covered clearing in the beech forest that clothes most of the high country in Abel Tasman National Park, at the northern end of the Pikikiruna Ra., N.W. Nelson. In spite of past burning and continued browsing by deer Moa Park is a most attractive area, with nearly 200 species of higher plants and much of interest in the vegetation. Following a brief look at the clearing in May 1968, I decided to return for a longer visit, and spent two days there in January 1969. My main purpose was to study and record the plants growing in the clearing but I also made some general notes on the vegetation.

The clearing, of 100 to 150 acres, follows the bottom of a winding valley (Table Ck.) for about  $1\frac{1}{2}$  miles, not far from the highest point in the Park (Mt Evans, 3722 ft). The altitude ranges from 3100 to 3300 ft. The stream has a very gentle gradient in this part of its course and runs between hills that rise only 100 to 300 ft above the valley floor. The underlying rock throughout is granite, of which there are a number of massive outcrops. The presence of terrace remnants and deep deposits of weathered granite suggests that the valley has been partially filled at some time, probably during the last glacial period. Since then the stream has cut down to its present position, on bedrock. The soils are of very low fertility except where sandy alluvium has been deposited along the stream banks or where there has been some flushing from seepage water. On the valley floor the water table is generally high and the soils peaty.

All this leads to the question: Why is this valley not in forest? Since the last glacial period (10,000 or so years ago), when the whole area would have been treeless, there must have been some continuing climatic factor and/or soil factor restricting the establishment and growth of trees in this valley. The two obvious ones to consider are low temperature (caused by cold air collecting during periods of calm, clear weather) and poor soil aeration (caused by high water tables). There is little doubt that the latter is a major factor restricting the growth of woody plants today, but it may not always have been so. I am inclined to think that cold air drainage is the more important factor in this area, especially when one sees that the valley is suitably shaped to act as a sink, being wide and nearly flat in the middle and having only a narrow outlet.

The precise natural limits of forest in the valley cannot be seen today, for fires, presumably started in the tussock, have burnt back the original forest margins over most of their length. There has been a good deal of soil erosion on the valley sides, and regeneration of beech (mainly silver, with a little mountain) is very patchy. I

do not know to what extent the erosion and lack of regeneration can be attributed to trampling and browsing by deer. Although in general the tussock vegetation, with the exception of the few flushed areas, does not appear to be much affected by browsing, a very different story is apparent in the surrounding beech forest. Here the understorey probably bears little resemblance to its former state. One of the key indicator species to look for in such situations is mountain five-finger (*Pseudopanax colensoi*), and this is now extremely scarce.

#### VEGETATION

The dominant plant in the clearing is red tussock (*Chionochloa rubra*), but there are a number of shrubs that are important too, and in fact the vegetation varies all the way from tussock land through shrub-tussock land to scrub. The whole appearance of the clearing is remarkably like that of some higher parts of the central North Island Volcanic Plateau where there has been accumulation of pumice in basins and valleys. The pale bare areas of weathered granite remind one of pumice; and the rounded outcrops of massive granite are equivalent to outcrops of ignimbrite. The more important shrub species in Moa Park — *Hebe tetragona*, *H. sp.* (*H. odora* agg.), bog pine (*Dacrydium bidwillii*), mountain tauhinu (*Cassinia vauvilliersii*), manuka (*Leptospermum scoparium*) — are also important in parts of the Volcanic Plateau. Similar topography and climate, and soil parent materials derived from similar acid magmas, seem to have led to similar vegetation in the two areas.

A. E. Esler has briefly described the vegetation of Moa Park in the Abel Tasman National Park Handbook (1st ed. 1962, reprinted 1965) and in his paper "Botanical Features of Abel Tasman National Park" (*Trans. R. Soc. N.Z. Bot. 1*). He divides the soil and vegetation into three zones: (1) peaty soils with red tussock, sphagnum moss, comb sedge (*Oreobolus* spp.), etc.; (2) skeletal soils on exposed granite outcrops with ericoid shrubs (manuka, etc.); and (3) semi-peaty soils on intermediate sites, with red tussock, bog pine, *Hebe* sp. (*H. odora* agg.), etc. This hardly does justice to the considerable variation in the vegetation. A detailed study must wait, however, and all I shall do here is to give a few examples of the vegetation to illustrate the range present. I have placed the examples roughly in order, from the tallest (10 ft high) down to the shortest (a few inches high). There are other kinds of vegetation present, e.g. *Olearia lacunosa* scrub, *Dacrydium bidwillii* scrub-tussock land, *Carpha alpina* sedgeland, which I have not described for want of adequate notes.

1. *Scrub*. This example is from a valley side of moderate slope, on granite (in situ) where there has been some soil erosion. The area has been burnt, probably several times, the original vegetation having been in all probability silver beech forest. The dominant shrub now is manuka, reaching a height of 10 ft. Mixed with the

manuka, but at a lower level, are scattered plants of bog pine, red tussock, and *Olearia lacunosa*. The more prominent ground-storey plants — mainly in canopy gaps — are *Cyathodes empetrifolia*, *Cassinia vauvilliersii*, *Oreobolus strictus*, and *Celmisia incana*. Other plants present are mostly low shrubs, lichens, and mosses. There is still some bare ground.

2. *Shrub-tussock land*. This example is also from a valley side, but the soil parent material is a deep deposit of sand and fine gravel, weathered from granite. Although this site is near the edge of the clearing it does not appear to have ever carried forest. The main canopy layer, about 6 ft high, is composed of *Hebe* sp. (*H. odora* agg.) and red tussock, with some *Coprosma* sp. (a). Through this layer emerge a number of bog pine about 8 ft high. The ground-storey consists of *Cassinia vauvilliersii*, *Poa colensoi*, *Hebe tetragona* and various herbs.

3. *Shrub-tussock land*. Another similar example of shrub-tussock land is from the levees bordering the main stream near the middle of the clearing. The ground is very uneven, the alluvial sand having been scoured out in many places by flood waters. Much tussock litter has been washed in and left stranded at the time of my visit. The canopy is dominated by *Hebe* sp. (*H. odora* agg.), red tussock and *Coprosma* sp. (a), up to 6 ft high. A few plants of bog pine and *Aciphylla colensoi* are also present. The ground-storey varies from place to place; the more common of the twenty or more herbs present are *Helichrysum bellidioides*, *Poa colensoi*, *Cotula squalida*, *Viola cunninghamii* and *Drapetes laxus*.

4. *Tussock land*. This example is from a very gentle slope approaching the valley floor. The upper storey is composed almost entirely of red tussock four to five feet high, there being only a very few plants of *Hebe* sp. (*H. odora* agg.) and bog pine present. The lower storey is dominated by *Poa colensoi* and there is much tussock litter on the ground. Other important plants here are *Cyathodes empetrifolia*, *Oreobolus strictus*, *Hebe tetragona*, and *Coprosma cheesemani*.

5. *Tussock/sphagnum-moss field*. This is on a terrace in the valley bottom, just at the foot of a slope. Here again red tussock dominates, with only a few plants of bog pine present, but the lower storey is different, being dominated by large mounds of sphagnum, *Poa colensoi* and *Hebe tetragona* are common, and there are many small herbs growing through the moss.

6. *Tussock/cushion herbfield*. This is on the valley floor below example 4; the ground is noticeably wetter underfoot here than on the nearby slope. The tussocks are shorter (3 ft), smaller in diameter, and more widely spaced. The ground is completely covered by low cushions of *Oreobolus strictus*, with which are associated a number of small herbs such as *Oreostylidium subulatum*,

*Plantago novae-zelandiae*, *Haloragis depressa* and *Drapetes laxus*.

7. *Tussock/cushion herbfield*. Another example of this kind of vegetation, with the water table even nearer the surface, has only scattered tussocks (still about 3 ft high). *Oreobolus pectinatus* is dominant on the ground instead of *O. strictus* and there are some mounds of sphagnum. *Carex echinata* and *Drosera arcturi* are the most abundant of the many other small herbs present.

8. *Cushion herbfield*. The last example comes from a low terrace where the water table is at the surface. The only tussock plants present are a few slender wisps 1 to 2 ft high. The dominant plant is *Gaimardia ciliata* forming low cushions an inch or two high. Other important plants are *Oreobolus pectinatus*, *Drosera arcturi*, *Carex echinata*, *Plantago novae-zelandiae*, and *Haloragis micrantha*.

#### THE FLORA

Of the 195 indigenous species of higher plants listed below, 75 have not previously been recorded from Abel Tasman National Park. A surprising feature of the flora is the near absence of the endemic element of northern South Island, here represented only by *Celmisia traversii*, which is uncommon, and the needle-leaved tussock, *Chionochloa juncea*, which is rare. Altogether only seven species out of the 195 listed are not also found in the North Island. They are:

*Archeria traversii*

*Carex kirkii*

*Celmisia traversii*

*Chionochloa juncea*

*Pittosporum crassicaule*

<sup>1</sup>*Uncinia fusco-vaginata* s.s.

*U. sp. (b) (U. nervosa* agg.)

<sup>1</sup>North Island plants hitherto placed under this name are regarded as belonging to a different species.

I have already remarked on the similarity of the vegetation with that of certain parts of the Volcanic Plateau. The same applies to the flora. All but nine of the 188 species common to Moa Park and the North Island occur on the Plateau, though a few (ten or so, mostly shrubs) are represented in the two areas by different subspecies. The nine species not there are listed below, together with their North Island distributions.

*Chionochloa cheesemanii* (Tararua Ra., Aorangi Ra., Huiarau Ra.).

*Colobanthus affinis* (Tararua Ra., Ruahine Ra., Egmont).

*Dracophyllum traversii* var. (*D. pyramidale*) (mountains N. of lat. 39 deg.).

*Gaultheria depressa* s.s. (Tararua Ra.).

*Metrosideros umbellata* (Tararua Ra., mountains N. of lat. 38 deg.).

*Notodanthonia nigricans* (Tararua Ra.)

*Olearia lacunosa* (Tararua Ra.).

<sup>1</sup>*Oreobolus strictus* (Tararua Ra.).

*Uncinia astonii* (Tararua Ra., S. Ruahine Ra.).

<sup>1</sup>Two unconfirmed records from elsewhere in the North Island (Cheeseman 1925).

Of course there are many species in the Volcanic Plateau that are not found in the relatively minute area of Moa Park. And not all the Moa Park species occur in any one part of the Plateau, though if topography and altitude are not too different most do. Thus, for example, about 150 species are common to Moa Park and the basin between Ruapehu and Hauhungatahi.

I thought it would be interesting to see how the flora of Moa Park compared with that of Goulund Downs 30 miles to the west, an area also dominated by red tussock, but at a lower altitude (1900—2900 ft) and much larger (about 8 sq. miles). The rocks here are sedimentary, mostly very old and non-calcareous (schist, greywacke, shale, quartzite), but including some Tertiary limestone supporting a distinctive assemblage of plants. About 160 species are common to Moa Park and the Downs, but the Downs flora is much larger—I noted 320 species on my visit—and contains many species (55 at least) not found in the North Island, including quite a few either locally endemic or endemic to the northern part of the South Island. Some of the vegetation, too, is very different, particularly that with dwarf, prostrate manuka found on the exposed tops of low ridges. Nothing like this occurs in the North Island or in Moa Park.

FLORA OF MOA PARK AND SURROUNDING HIGH COUNTRY  
3000 — 3700 ft

Numbers refer to specimens in Botany Division Herbarium, Lincoln.

F—common in forest; (F) uncommon in forest.

C—common in clearing; (C) uncommon in clearing.

An asterisk indicates that the species or hybrid has not previously been recorded from Abel Tasman National Park.

As the whole area has not been studied in detail this list is likely to be incomplete.

TREES AND SHRUBS

- |   |   |
|---|---|
| <i>Archeria traversii</i> (F)   | <i>C. fasciculata</i> F   |
| <i>Cassinia vauvilliersii</i> var. C<br>(180947)  | <i>C. fraseri</i> C   |
| <i>Coprosma cheesemanii</i> s.s. C<br>(189116)  | <i>C. juniperina</i> (C)  |
| * <i>C. colensoi</i> (incl. <i>C. banksii</i> ) (F)   | <i>Dacrydium bidwillii</i> C  |
| <i>C. foetidissima</i> F  | * <i>Dracophyllum filifolium</i> var. <i>col-<br/>linum</i> C (180948-9)  |
| <i>C. pseudocuneata</i> var. F (C)<br>(180966-7)  | * <i>D. traversii</i> var. <i>traversii</i> F (C)<br>(180861)   |
| * <i>C. sp.</i> (a) (unnamed, included in<br><i>C. parviflora</i> as var. <i>dumosa</i> by<br>Cheeseman, 1925, and Allan,<br>1961) C (180864, 180978) | <i>Epacris alpina</i> C   |
| * <i>C. sp.</i> (b) (unnamed, included in<br><i>C. parviflora</i> by Oliver, 1935,<br>and others) (F) (C) (180863,<br>180977)                         | <i>Gaultheria antipoda</i> (F) (C)<br>(180951)  |
| <i>Cordyline indivisa</i> (F)   | <i>G. depressa</i> s.s. C (180893, 180950)  |
| <i>Cyathodes colensoi</i> (C)   | * <i>G. sp.</i> (unnamed, included in <i>G.<br/>depressa</i> as var. <i>novae-zelandiae</i><br>by Franklin, 1962) (F) (C)<br>(180981) |
| <i>C. empetrifolia</i> C  | * <i>G. sp.</i> × <i>G. antipoda</i> (F) (C)<br>(180980)  |
|   | * <i>G. sp.</i> × <i>Pernettya macrostigma</i><br>(C) (189112)  |

- Griselinia littoralis* F (C)  
*Hebe tetragona* var. (*H. coarctata*)  
 C (180962)  
*H. sp.* (*H. odora* agg.) C (180968,  
 180982)  
*Leptospermum scoparium* (F) C  
*Libocedrus bidwillii* F  
*Metrosideros umbellata* F  
*Myrsine divaricata* F (C)  
*Nothofagus fusca* F  
*N. menziesii* F (C)  
*N. solandri* var. *cliffortioides* F (C)  
*Olearia arborescens* (F)  
*O. ilicifolia* (F)  
*O. lacunosa* (F) C (180969)  
 \**O. l.* × *O. arborescens* (F)  
 (189156)  
*O. l.* × *O. ilicifolia* C (180970)  
*Pentachondra pumila* C  
 \**Pernettya macrostigma* (C)  
*Phyllocladus alpinus* F C  
*Pimelea prostrata* C (189149-50)  
 \**Pittosporum crassaule* F (C)  
 (180973, 180995)  
*Podocarpus hallii* F  
*Pseudopanax anomalum* F  
 \**P. colensoi* s.s. (F) (C) (rare)  
 (189155)  
*P. simplex* F (180974)  
*Pseudowintera colorata* F  
*Quintinia acutifolia* F  
 \**Senecio bidwillii* var. *viridis* (C)  
 (180971)  
*S. elaeagnifolius* var. (*S. cockaynei*)  
 (F) (C) (180862, 180972)  
*Weinmannia racemosa* (C — rare)

#### LIANE

- Rubus cissoides* var. (F) (189131)

#### FERNS AND LYCOPODS

- Asplenium* sp. (*A. flaccidum* agg.) F  
*Blechnum discolor* (F)  
*B. fluviatile* F  
*B. penna-marina* (F) (C)  
*B. procerum* (*B. minus*) F  
 \**Cyathea colensoi* F  
 \**Grammitis armstrongii* (*G. pumila*)  
 (C — rare) (189151)  
*G. billardieri* (F)  
*Histiopteris incisa* F  
*Hymenophyllum malingii* F  
*H. multifidum* F C (180957)  
*H. rarum* (F)  
 \**H. rufescens* (F) (189135)  
*H. sanguinolentum* (incl. *H. vil-*  
*losum*) F  
 \**Hypolepis millefolium* F  
*Lycopodium australianum* (C)

- L. fastigiatum* (F) C  
*L. scariosum* (F) C  
*L. varium* (incl. *L. billardieri*) (F)  
*Polystichum vestitum* (F)  
*Todea hymenophylloides* (F)  
*T. superba* (F)

#### ORCHIDS

- Adenochilus gracilis* (F)  
*Aporostylis bifolia* (F) (C)  
*Caladenia lyallii* (C) (180975)  
 \**Chiloglottis cornuta* F  
 \**Corybas macranthus* s.s. (F)  
 \**Gastrodia cunninghamii* (F)  
*Prasophyllum colensoi* C  
 \**Pterostylis venosa* (C)  
 \**Thelymitra hatchii* C (180960)  
*T. longifolia* var. *longifolia* (C)  
 (180965)  
 \**T. pulchella* (incl. *T. caesia* and *T.*  
*pachyphylla*) C (180963)  
 \**T. venosa* (C) (180961)  
 \**T. sp.* (*T. pulchella* Hatch, 1952,  
 not *T. pulchella* Hook. f.) (C)  
 (180964)

#### GRASSES

- \**Agrostis dyeri* var. (C) (189136)  
*A. muscosa* C  
 \**A. perennans* (F) C (189127,  
 189162)  
 \**Chionochloa cheesemani* (F)  
 (189184)  
 \**C. juncea* (C — rare) (189102)  
*C. rubra* var. C (189182)  
 \**C. r. var.* × *C. cheesemani* (C)  
 (189185-6)  
 \**C. r. var.* × *C. sp.* (C — rare)  
 (189113)  
 \**Deschampsia tenella* (F) (189111)  
 \**Deyeuxia aucklandica* (C — rare)  
 (189114)  
 \**D. avenoides* var. *brachyantha* C  
 (189128)  
 \**Erythranthera australis* (C)  
 (189145)  
*Hierochloa* sp. (unnamed, aff. *H.*  
*fraseri*) (F) C (189141-4)  
*Microlaena avenacea* F  
 \**Notodanthonia gracilis* (F) C  
 (189167)  
 \**N. nigricans* C (189166)  
 \**Poa breviglumis* s.s. (F) (189158)  
*P. colensoi* C (189133)  
 \**P. sp.* (unnamed) (F) (180983,  
 180996)

#### SEDGES

- Carex dissita* (incl. *C. d. var.*  
*monticola*) F C (180979, 189180-1)

- \**C. echinata* var. (*C. stellulata* var. *australis*) C (189124)  
*C. gaudichaudiana* C (180987)  
 \**C. geminata* (F) C (189110)  
 \**C. kirkii* (C) (180959, 189109)  
 \**C. sinclairii* C (180988-9)  
 \**C. uncifolia* (C) (189138-9)  
*Carpha alpina* C  
 \**Gahnia procera* F (C)  
*Oreobolus pectinatus* C  
*O. strictus* C  
 \**Scirpus caliginis* (C) (189168)  
 \**S. habrus* F (180984)  
 \**S. merrillii* C (180986, 189140)  
 \**Uncinia astonii* F (189115)  
*U. filiformis* F  
*U. fuscovaginata* s.s. C (180985), 189137)  
*U. rupestris* F (189178)  
 \**U. silvestris* s.s. (F) (189177)  
*U. uncinata* F  
 \**U. zotovii* F (189179)  
 \**U. sp. (a)* (*U. nervosa* agg.) C (189174-5)  
 \**U. sp. (b)* (*U. nervosa* agg.) (C) (189176)  
 \**U. sp. (c)* (unnamed, included in *U. silvestris* as var. *squamata* by Hamlin 1959) C (189120)
- RUSHES  
 \**Gaimardia ciliata* (C) (180976)  
 \**Juncus antarcticus* C  
 \**J. gregiflorus* (F) (C)  
*J. novae-zelandiae* C (189122)  
*J. pusillus* (C) (189125)  
*Luzula migrata* (Mt Evans — rare) (180998, 189146)  
*L. picta* s.s. F C (180958, 189164-5)
- MONOCOT HERBS (OTHER THAN GRASSES, GRASSES, SEDGES, RUSHES)  
*Astelia nervosa* F  
*Libertia pulchella* F  
*Luzuriaga parviflora* F  
*Phormium colensoi* (F) C
- DICOT HERBS  
*Abrotanella caespitosa* C  
*Acaena anserinifolia* (F)  
*Aciphylla colensoi* C  
*Anisotome aromatica* C  
*Celmisia incana* (incl. *C. discolor*) C (189152)  
 \**C. spectabilis* var. *angustifolia* (C) (189154)  
*C. traversii* (C)  
 \**Colobanthus affinis* C (189119)  
 \**Cotula squalida* var. (F) C (180954-6)
- \**Drapetes laxus* C (180994)  
*Drosera arcturi* C  
 \**D. spathulata* C (180997)  
*Epilobium alsinoides* (F) (189159)  
 \**E. cockayneanum* C  
*E. linnaeoides* (F) (180999)  
 (This is considered to be distinct from *E. pedunculare* s.s.)  
*E. nerterioides* (*E. pedunculare* var. *viride*) C (189154)  
 \**E. pernitens* C (189129)  
 \**E. pubens* s.s. (F)  
 \**E. sp.* (unnamed, at present placed as var. *brunnescens* of *E. pedunculare*) C (189123)  
*Forstera tenella* (C) (189163)  
 \**Galium perpusillum* C  
*Gentiana bellidifolia* C (189153)  
 \**Geranium microphyllum* C  
*Geum leiospermum* (C)  
 \**Gnaphalium paludosum* C (189183)  
*G. traversii* (cleared land only)  
*G. sp. (a)* (unnamed, this and the following at present included in *G. collinum*) (F)  
*G. sp. (b)* (unnamed) (C) (189199)  
*Gunnera monoica* (incl. *G. albocarpa* and *G. strigosa*) C  
*Haloragis depressa* C  
*H. micrantha* C  
*Helichrysum bellidioides* s.s. C (189117)  
*H. filicaule* (C)  
 \**Herpolirion novae-zelandiae* (C)  
*Hydrocotyle microphylla* (F)  
 \**H. sp.* (unnamed, at present placed as var. *montana* of *H. novae-zelandiae*) C (181000)  
*Lagenophora cuneata* C (189130)  
*L. petiolata* (F)  
*L. pumila* s.s. (cleared land only)  
 \**Montia fontana* s.s. C (189121)  
 \**Myosotis venosa* (F — rare) (189160)  
 \**Nertera balfouriana* C (180953, 189126)  
 \**N. ciliata* C (180952)  
*N. sp.* (unnamed, at present included in *N. dichondraefolia*) (F) (189132)  
*Oreomyrrhis colensoi* s.s. C (189157)  
 \**O. ramosa* (incl. *O. colensoi* var. *delicatula*) (cleared land only)  
*Oreostylidium subulatum* C  
*Oxalis lactea* (F)

*Plantago novae-zelandiae* C  
(180990-2)

\**P. uniflora* C

*Pratia angulata* (F) C

*Ranunculus* sp. (a) (*R. lappaceus*  
agg.) C (189169-72)

\**R.* sp. (b) (unnamed, at present  
placed as var. *stoloniferus* of *R.*  
*hirtus*) (F) (189148, 189161)

\**R.* sp. (a) × *R.* sp. (b) (?) (C —  
rare) (189173)

\**Raoulia glabra* C (180993)

*R. grandiflora* var. *grandiflora* C  
(189147)

\**Schizeilema nitens* C

*Stellaria parviflora* (incl. *S. minuta*) F

*Viola filicaulis* F

*V. cunninghamii* C

#### ADVENTIVE PLANTS

*Agrostis tenuis* C

*Anthoxanthum odoratum* (C)

*Carex ovalis* (F) (C)

*Cerastium holosteoides* (F)

*Cirsium vulgare* (F)

*Cytisus scoparius* (C) (The three  
plants seen were pulled out)

*Epilobium adenocaulon* (C)  
(189118)

*Festuca rubra* var. *commutata* (C)

*Holcus lanatus* C

*Hypochoeris radicata* C

*Juncus effusus* C

*Mycelis muralis* (F)

*Rumex acetosella* C

*Sagina apetala* (C)

*Trifolium repens* (C)

The following records of plants from Moa Park and the surrounding high country in Abel Tasman National Park (Esler, 1962a, 1962b) could not be confirmed; most of them appear to be based on misidentifications.

*Astelia petriei?*

*Cassinia vauvilliersii* var. *albida*

*Chionochloa flavescens* (as *Dan-*  
*thonia flavescens*) = *C. cheese-*  
*manii?*

*C. rigida* (as *Danthonia raoulii* and  
*D. rigida*) = *C. rubra* var.

*Coprosma cuneata* = *pseudocuneata*  
var.

*C. parviflora* = *C.* sp. (a) and/or  
*C.* sp. (b) (unnamed)

*C. pumila*

*Cotula minor* = *C. squalida* var.

*Cyathodes dealbata* (as *C. pumila*)

*Dracophyllum latifolium* = *D.*  
*traversii* var. *traversii*

*D. urvilleanum* = *D. filifolium* var.  
*collinum* (Whether these are  
really distinct needs looking into;

perhaps, also, they might be  
better placed under *D. longi-*  
*folium*)

*Drapetes villosus* = *D. laxus*

*Drosera pygmaea* = *D. spatulata*

*Epilobium chloraefolium*

*Gahnia setifolia* = *G. procera*

*Hebe vernicosa*

*Hierochloa fraseri* = *H.* sp. (un-  
named)

*Pittosporum divaricatum* = *P.*  
*crassicaule*

*Plantago triantha* = *P. novae-*  
*zelandiae*

*Raoulia subsericea* = *R. glabra*

*Senecio adamsii* = *S. bidwillii* var.  
*viridis?*

*Uncinia compacta* = ?

*U. rubra* = *U.* sp. (c) (unnamed)

#### REFERENCES

- ALLAN, H. H. 1961. *Flora of New Zealand*. Government Printer, Wellington. Vol 1.
- CHEESEMAN, T. F. 1925. *Manual of the New Zealand Flora*. 2nd ed. Government Printer, Wellington.
- ESLER, A. E. 1962a. Botanical features of Abel Tasman National Park. *Trans. R. Soc. N.Z. Bot. 1*: 297-311.
- 1962b. Trees and Plants in "Abel Tasman National Park." 1st ed. Abel Tasman National Park Board, Nelson. (Note: this is not included in the 2nd ed. 1967).
- FRANKLIN, D. A. 1962. The Ericaceae in New Zealand (*Gaultheria* and *Pernettya*). *Trans. R. Soc. N.Z. Bot. 1*: 155-173.
- HAMLIN, B. G. 1959. A revision of the genus *Uncinia* in New Zealand. *Rec. Dom. Mus.* 19.
- HATCH, E. D. 1952. The New Zealand forms of *Thelymitra* J.R. and G. Forster and appendices. *Trans. R.Soc. N.Z.* 79: 386-402.
- OLIVER, W. R. B. 1935. The genus *Coprosma*. *Bishop Mus. Bull.* 132.