The Flora of Ball's Clearing Scenic Reserve

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IN June 1967, members of this society visited Ball's Clearing near Puketitiri, 25 miles north-west of Napier. At the entrance to the reserve we were confronted by a notice which read as follows:

BALL'S CLEARING

Area of Reserve 595 acres. Area of bush 89 acres.

Commercial Timber contained in bush		
	Rimu	46%
	Kahikatea	36%
	Miro	11%
	Matai	5½%
	Beech	1½%

Total Timber 9,000,000 ft board measurement. Yield compares favourably with max. yield anywhere in N.Z. representing 100,000 ft per acre. This bush is preserved because it is representative of the natural cover in the locality, and is a compact block of pure podocarp forest of unusual size and density.

While walking through the bush, and beyond it into the grassed paddock that was once a natural tussock and scrub clearing surrounded by forest, two thoughts went through my mind, both started off by that notice. Firstly, what relevance did those figures about the number of board feet of *commercial* timber have to this scenic *reserve* of tall, dense podocarp forest? None whatsoever, I thought; the trees were impressive by their very presence, not by their content of timber. Secondly, the notice was an example of how to rewrite history or, should I say, of how to omit from the record uncomfortable historical facts. On the notice only 89 out of the 595 acres in the reserve are accounted for and no mention is made of any *clearing*. Through a misunderstanding of the purpose of the reserve — that it was for preserving only the forest — the tussock land and scrub were disced, since it was believed they constituted a fire hazard (N. L. Elder, unpublished report "Ball's Clearing Reserve"). This was in 1954; the land was later sown down in grass. Apparently the rising generation is not to know the origin of the name of this reserve — not to know in

fact that there was ever a natural clearing here. This age has produced the un-person; perhaps we now also have the un-clearing.

As we crossed the grassed paddock we could see that many of the original native plants of the clearing were still surviving along stream banks, on terrace edges, in seepages, and in patches of low-lying, closely grazed turf. I decided to return in the summer and compile a complete list of the higher plants found in the reserve. My wife and I accordingly spent parts of two days (Dec. 30—31, 1967) searching every remaining fragment of native vegetation in the clearing, and traversing the forest and margins of the intact part of the reserve. The number of plants that turned up was astonishing.

In his description of the vegetation of the reserve in 1950 Elder (Bulletin No. 23) records that since his first visit in 1924 four species had disappeared from the clearing *(Olearia nummularifolia, Wahlenbergia pygmaea, Thelymitra decora, Aporostylis bifolia)*. To date, rather surprisingly, only four additional species appear to have gone *(Herpolirion novae-zelandiae, Lagenophora cuneata, Hydrocotyle tripartita, Epilobium tenuipes.)* But the number of species now represented by no more than a few scattered individuals, and thus on the edge of local extinction, is well over 50. In addition to the known losses there may have been others over the years, which have gone unrecorded.

In the list below 250 species are recorded from the reserve; 75 of these were mentioned by Elder in the course of his article on the vegetation. That there are, or were, so many species present in such a small area (less than 1 sq. mile) may be accounted for by the juxtaposition of the open clearing and the tall forest. Also, the altitude (2000 ft) is right for a mixing of lowland and upland species.

The original vegetation of the clearing was tussock land, with smaller areas of sphagnum bog and scrub. Elder records that these had been considerably modified by cattle and rabbits before they were finally destroying by discing. The underlying material is deep pumice alluvium containing charcoal, and all the plants without exception are characteristic of the central North Island volcanic plateau. Thus no species will become extinct as a result of the destruction of the clearing, however regrettable that destruction may be. Only two of the species in the clearing *(Clematis quadribracteolata* and *Mazus radicans)* are uncommon in the North Island. The botanical significance of this natural clearing lay not in uniqueness — there are many similar clearings on deep pumice in the central North Island — but in the fact that it was one of the few east of the ranges, and the only one there with forest still partially surrounding it.

Numbers refer to specimens in Botany Division Herbarium, Lincoln.

(F), (C), (M), — forest, clearing, and margin between forest and clearing, respectively.

(Elder), (Allan — recorded in Bulletin No. 23 and in *Flora of N.Z.* respectively, but not seen by A.P.D.

TREES AND SHRUBS

Alseuosmia pusilla (F)
Aristotelia fruticosa var. *microphylla* (M) (180728)
A. serrata (F)
Brachyglottis repanda var. *repanda* (F)
Carmichaelia arborea var. *(C. corymbosa)* (M, C) (165230)
Carpodetus serratus (F)
Cassinia vauvilliersii var. (C)
Coprosma australis (F)
C. brunnea var. (C)
C. cheesemanii s.s. (C) (165231, 179727)
C. linariifolia (M) (Elder)
C. lucida (F)
C. propinqua (M, C)
C. p. × *C. tenuifolia* (M) (179709)
C. rhamnoides (F, M)
C. rigida (F, M, C)
C. robusta (F)
C. rotundifolia (F)
C. rubra (F) (165226)
C. tenuifolia (M)
C. sp. (a) (unnamed, included in *C. cheesemanii* in *Flora of N.Z.)* (C) (165229, 179762)
C. sp. (b) unnamed, included in *C. parviflora* in *Flora of N.Z.)* (F, M, C) (179772)
Cordyline australis (M, C)
Corokia cotoneaster var. *cotoneaster* (M, C)
Cyathodes fasciculata (M)
C. frazeri (C)
Dacrydium cupressinum (F)
Dracophyllum subulatum (M, C)
Elaeocarpus hookerianus (F, M)
Fuchsia excorticata (F)
Gaultheria antipoda (F)
Griselinia littoralis (M)
Hebe stricta var. *stricta* (M, C)
Helichrysum glomeratum s.s. (F)
Hoheria populnea var. *lanceolata (H. sexstylosa,* (F, M)
Hymenanthera alpina (C)
Leptospermum ericoides (M)
L. scoparium (M, C)
Melicope simplex (F, M)
Melicytus lanceolatus (F, M)
M. micranthus (F)
M. ramiflorus (F)
Muehlenbeckia axillaris (C)
Myrsine australis (F)
M. divaricata (M)
M. salicina (F)
Neomyrtus pedunculata (F, M)
Nestegis (Olea) lanceolata (F, M)
Nothofagus fusca (F, M)
N. solandri var. *cliffortioides* (M)
N. s. var. c. × *N. fusca* (M)
Olearia furfuracea s.s. (F)
O. nummularifolia var. *nummularifolia* (C) (Elder)
O. virgata var. (M, C)
Paratrophis microphylla (F)
Pennantia corymbosa (F, M)
Pernettya macrostigma (C)
Pimelea prostrata s.s. (C) (179768)
Pittosporum anomalum (Allan)
P. divaricatum (M) (179372—3)
P. eugenioides (F)
P. ralphii (M)
P. tenuifolium var. *tenuifolium* (F, M)
P. t. var. *t.* × *P. t.* var. *colensoi* (F, M) (179770)
Podocarpus dacrydioides (F)
P. ferrugineus (F)
P. hallii (F)
P. spicatus (F, M)
P. totara (F)
Pseudopanax anomalum (F, M)
P. arboreum (F)
P. crassifolium (F, M)
P. edgerleyi (F)
P. simplex var. *(Neopanax simplex* var. *sinclairii)* (F)
Pseudowintera axillaris (F)
P. colorata (F)
Schefflera digitata (F)

LIANES

Clematis foetida (F)
C. forsteri (M)
C. paniculata (F)
C. quadribracteolata (M, C)
Metrosideros diffusa (F)

Muehlenbeckia australis (F)
Parsonsia capsularis var. *ochracea* (M)
P. heterophylla (F)
Rubus cissoides var. (F)
R. schmidelioides var. *schmidelioides* (M)

FERNS AND LYCOPODS

Asplenium bulbiferum (F)
A. colensoi (F)
A. falcatum (F)
A. flabellifolium (M)
A. hookerianum s.s. (F)
A. sp. *(A. flaccidum* agg.) (F)
A. sp. × *A. bulbiferum* (F)
A. colensoi × *A. bulbiferum* (F)
Azolla filiculoides var. *rubra* (C)
Blechnum aggregatum (B. lanceolatum) (F)
B. colensoi (B. patersonii) (F)
B. fluviatile (F)
B. penna-marina (M, C)
B. procerum (B. minus) (F)
B. vulcanicum (F)
B. sp. (a) *(B. capense* agg.) (F, M)
B. sp. (b) *(B. capense* agg.) (C)
Botrychium australe var. *australe* (F, M)
B. australe var. *millefolium* (F, M)
Cyathea dealbata (F)
C. smithii (F)
Dicksonia fibrosa (F)
D. lanata (F)
D. squarrosa (F)
Gleichenia cunninghamii (M)
G. dicarpa (G. circinata) (M, C)
Grammitis billardieri (F)
Histiopteris incisa (F)
Hymenophyllum bivalve (F)
H. demissum (F)
H. flabellatum (F)
H. multifidum (F)
H. sanguinolentum (F)
H. scabrum (F)
Hypolepis millefolium (M)
H. sp. *(H. tenuifolium* agg.) (M)
Leptolepia novae-zelandiae (F)
Lycopodium fastigiatum (M, C)
Microsorium diversifolium (F)
Paesia scaberula (M)
Pellaea rotundifolia (F)
Polystichum vestitum (F)
Pteridium aquilinum var. *esculentum* (M)
Pyrrosia serpens (F)
Thelypteris penniger (F)
Todea hymenophylloides (F)
T. superba (F)
T. s. × *T. hymenophylloides* (F) (179723)
Trichomanes venosum (F)

ORCHIDS

Aporostylis bifolia (C) (Elder)
Caladenia minor (M)
Corybas macranthus s.s. (M)
Earina mucronata (F)
Microtis unifolia (C)
Prasophyllum colensoi (C)
Pterostylis banksii var. *patens* (M)
P. sp. (P. montanah) (M)
Thelymitra decora (C) (Elder)

GRASSES

Agropyron sp. *(A. scabrum* agg.) (C) (179769)
Chionochloa rubra var. *rubra* (C) (165249)
Cortaderia fulvida (C)
Deyeuxia avenoides var. *brachyantha* (C)
Festuca novae-zelandiae var. (C) (165247, 179764)
Hierochloe sp. (unnamed, aff. *H. redolens)* (M. C) (179760)
Microlaena avenacea (F)
M. stipoides (M)
Notodanthonia gracilis (C)
Poa anceps var. *anceps* (M)
P. laevis var. (a) (C) (165248, 180588)
P. 1. var. (b) (C) (180589—90)
P. pusilla (C) (179718)

SEDGES, RUSHES, AND REEDS

Carex breviculmis (C)
C. coriacea (C) (179771)
C. dissita s.s. (F)
C. forsteri (F)
C. maorica (C)
C. secta (C)
C. solandri (F)
C. stellulata var. *australis* (C)
C. sp. (unnamed, aff. *C. dipsacea)* (C) (179758)
Carpha alpina (C)
Cladium rubiginosum (C)
Eleocharis acuta (C)
E. gracilis (C)
Gahnia pauciflora (F)

Juncus gregiflorus (C)
J. planifolius (C)
Lepidosperma australe (C)
Luzula picta s.s. (M, C)
L. subclavata (M)
Oreobolus pectinatus (C)
Schoenus maschalinus (C)
Scirpus habrus (M)
S. merrillii (C)
S. sp. *(S. pottsii?)* (C)
Typha muelleri (C)
Uncinia banksii (F) (179714, 179733)
U. distans (F, M) (179715—6)
U. gracilenta (F) (179728)
U. laxiflora (M) (179734)
U. rubra (C)
U. rupestris (F , M)
U. scabra (F) (179712)
U. uncinata (F)
U. zotovii (F) (179726)

HERBS (OTHER THAN THOSE LISTED ABOVE)

Acaena anserinifolia (M)
A. microphylla var. *microphylla* (C)
A. m. var. *m.* × *A. novae-zelandiae* (C)
A. novae-zelandiae (C)
Arthropodium candidum (M)
Astelia fragrans (M)
Cardamine sp. (a) *(C. debilis* agg.) (F)
C. sp. (b) *(C. debilis* agg.) (M) (180593—5)
Celmisia gracilenta (C) (179763, 179773)
C. setacea (C) (179731)
Centella uniflora (C)
Collospermum microspermum (F)
Dichondra sp. *(D. brevifolia?)* (C)
Drosera binata (C)
Epilobium chionanthum (C)
E. insulare (C)
E. pallidiflorum (C)
E. tenuipes (C) (Elder)
Galium perpusillum s.s. (C)
G. tenuicaule (C)
Geranium microphyllum (C) (180582—3)
G. potentilloides var. *potentilloides* (C) (180584—5)
G. sessiliflorum var. *novae-zelandiae* (C)
Gnaphalium luteo-album (M)
G. sp. (a) *(G. collinum* agg.) (C) (179761)
G. sp. (b) *(G. collinum* agg.) (C) (179724—5)
G. sp. (c) *(G. collinum* agg. (C)
Gratiola sexdentata (C)
Haloragis depressa (M, C)
H. micrantha (C)
Helichrysum filicaule (C)
Herpolirion novae-zelandiae (C) (Elder)
Hydrocotyle elongata (F)
H. microphylla (M)
H. novae-zelandiae var. *montana* (C)
H. tripartita (C) (Elder)
Hypericum japonicum (C)
Lagenophora cuneata (C) (Elder)
L. pinnatifida (M)
L. pumila s.s. (C)
Lemna minor (C)
Mazus radicans (M, C)
Mentha cunninghamii (M, C)
Microseris sp. *(M. scapigera* agg.) (C)
Montia fontana s.s. (C)
Nertera ciliata (C)
N. setulosa (C)
Oreomyrrhis ramosa (C) (179369, 179766—7)
Oxalis corniculata (C)
O. lactea (M)
Phormium colensoi (M)
Potamogeton suboblongus (C)
Potentilla anserinoides (C)
Plantago raoulii var. (M) (179719)
Pratia angulata (C)
Ranunculus glabrifolius (C) (179754)
R. hirtus s.s. (M, C)
R. rivularis (C)
Senecio minimus (M)
Stackhousia minima (C)
Stellaria parviflora (F)
Urtica incisa (M)
Viola cunninghamii (C)
V. filicaulis (M)
Wahlenbergia pygmaea var. *pygmaea* (C) (Elder as *W. albomarginata)*