

Native Vascular Flora of Papaitonga and Environs, Ohau, Horowhenua

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In 1930, 92 hectares of Lake Papaitonga and environs, largely bushclad, were bought by the Government for a Scenic Reserve. Recent management by the Department of Lands and Survey has improved access to the entrance and created a pleasant walkway, partly by way of a raised wooden causeway across the swamp. This highlights the swamp vegetation for visitors. The plant list which follows was compiled from 1940 onwards from vegetation surrounding the lake, not only in the Scenic Reserve but within the immediate area as defined in Fig. 1. Some of the plants were noted in bush which remains private property, and some in swamps, pastures and watercourses bordering the reserve. Thus this article is a record of the area's vegetation as a whole rather than of species within political boundaries. All species outside of the present reserve are within 0.5 km of the reserve boundary, but in general they are much nearer.

The lake itself occupies 64.75 hectares, and is a dammed valley lake¹ at the western margin of the Horowhenua sandstone upland. Former streams have cut down into the sandstone leaving more or less level headlands alternating with deep swampy gullies. The lake is impounded in the west by the coastal dune belt². Somewhat modified bush remains beside the eastern and northern shores. Most of the rolling land on the southern shore has been cleared and farmed since the early days of European settlement but some native vegetation still remains, especially at the lake margin. At the western end of the lake there are deep and extensive flax swamps, in parts drained by deep ditches. Natural drainage from the lake is by way of the small Waiwiri Stream at the south-west corner. There are two islands in the lake, the smaller one made artificially by local Maoris for defence, while the larger one near the eastern shore is a cutoff portion of the sandstone headland³. The lake is shallow, a maximum depth of 2.8 m around the western end of the larger island being recorded in 1950¹.

Probably as the result of deep drains in neighbouring swamps the water level has dropped, exposing wide muddy shores. It is proposed to preserve the lake's scenic beauty by installing a weir to control the water level.

Bush now remaining on the sandstone spurs owes its preservation to being relatively inaccessible. Gullies of deep swamps serve as natural boundaries to the sandstone headlands, some of which remain accessible the eastern shore is a cutoff portion of the sandstone headland³. The lake is shallow, a maximum depth of 2.8 m around the western end of the larger island being recorded in 1950¹.

The following is a brief summary of the vegetation according to habitats:

1. Mixed podocarp-broadleaf forest and shrubs of the sandstone spurs: tawa, kohekohe, titoki, karaka.

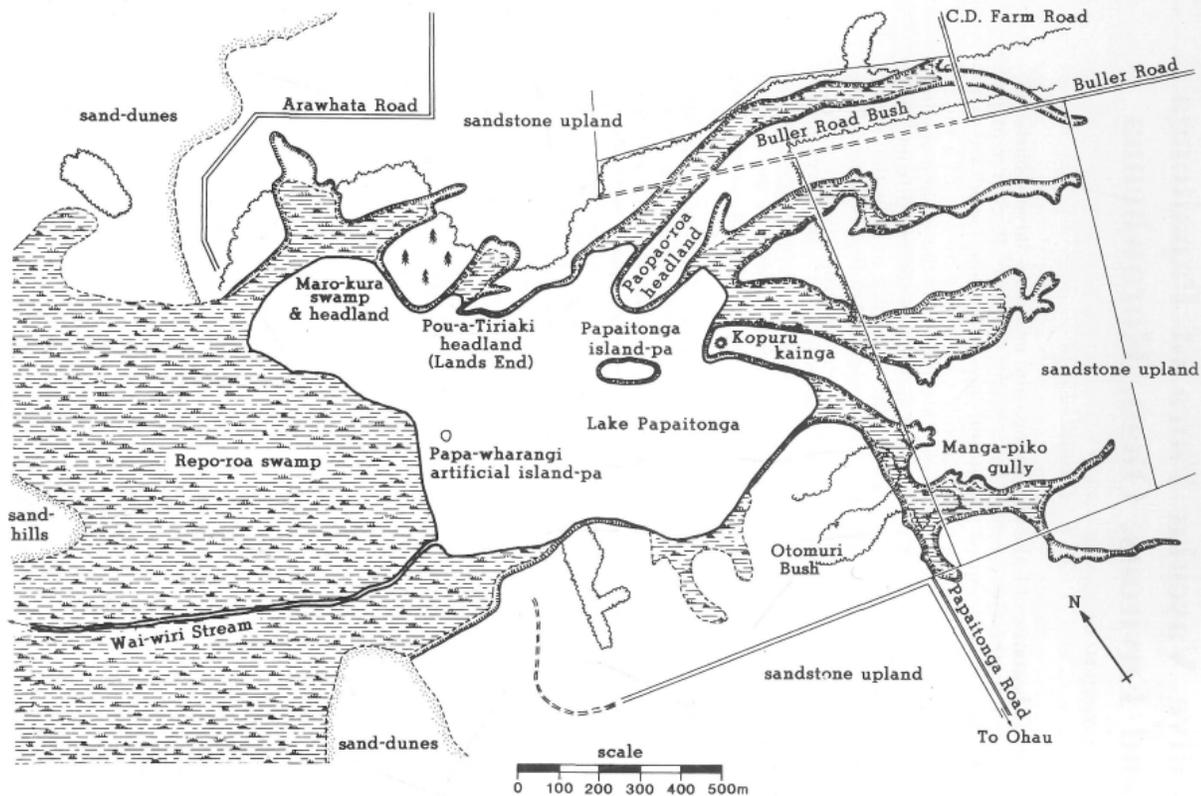


Fig. 1: LAKE PAPAITONGA AND ENVIRONS
(adapted from G.L. Adkin 1948)

2. Swamp forest at the upper ends of gullies: pukatea, kahikatea, maire-tawake, kiekie.
3. Deep swamp with flax, toetoe, *Gahnia xanthocarpa*. In the central and lower parts of these gullies there are, in addition, very tall *Blechnum* sp. (*B. capense* agg.) with *Astelia grandis* and koromiko, and, to a lesser extent, *Coprosma robusta*, and tutu.
4. Level shore platforms with an average width of about 4 m around the cliffed sides of the sandstone spurs, with *Lobelia anceps*, small sedges, *Hydrocotyle novae-zelandiae*, and other low-growing plants. Low, cleared land bordering the swamps provides a similar habitat.
5. Fringes of summer-green shore vegetation of raupo and various tall sedges, some emergent in the shallow, marginal lake waters.
6. Floating aquatics: *Azolla* and members of Family Lemnaceae. The exotic duckweed, *Spirodela punctata*, occurs in addition to native species.
7. Submerged water plants (not listed).
8. Open country, mainly pasture, adjacent to 1 (above).

Vegetation of the sandstone spurs

To the east and north these are largely in bush, some of which has been more open in the past, e.g. there is a record of a clearing for Maori food cultivation on Paopaoroa headland in the 1880's. Handsome specimens of matai and miro towards the western end have probably grown up since then. About 1929, in the bush near the end of Buller Road, there was a group of tall, straggling heketara becoming over-shaded by tawa. This must have been growing in a sunny glade for some years previously but the species is now confined to semi-sunny situations at the cliffed margin of the sandstone. After the fall of a giant tawa the open glade so formed became filled with kohekohe seedlings. These later thinned themselves naturally to a few vigorous trees which flowered for some years before becoming debilitated by an overshadowing canopy of taller tawa and other trees.

For many years this part of the bush was filled with large terrestrial ferns, particularly *Asplenium bulbiferum* (two subspecies), *A. oblongifolium*, *Lastreopsis hispida* and others, with drifts of *Hymenophyllum demissum* on the forest floor. The trunks of trees and saplings were hidden under spreading fronds of the climbing ferns *Blechnum filiforme*, *Phymatosorus scandens* and *Arthropteris tenella*. A long, dry season about 1973 killed all undergrowth of ferns, saplings and herbaceous plants. By 1977, wet seasons had restored some of these components, but unfortunately a tremendous number of karakas have germinated and in many parts these now threaten to dominate the bush. The rapid growth and later heavy canopy of karaka will deplete the vegetation of the understorey and in time the forest floor will be bare under the karakas, as is happening elsewhere in the district. The ferns have come again to the bush, but very little *Arthropteris tenella*, formerly a plentiful species throughout the whole district but now very sparse.

In semi-sunny places near the western end of the spurs there are *Adiantum cunninghamii*, *Libertia ixioides* and some of the smaller

Uncinia species, with a fringe of rangiora and other light-demanding shrubs.

The Species List

245 taxa are recorded, including 57 ferns and fern allies. Families, and species within families, are listed alphabetically. Names used are mostly those in Volumes I, II and III of "Flora of New Zealand". Where a later, revised name is preferred the "Flora" name is cited as a synonym. Abbreviations: frequencies are denoted by— (A) abundant; (C) common; (O) occasional; (R) rare; (E) presumed to be extinct (not seen since about 1955). Habitats are indicated by their numbers from the preceding discussion and, in addition, (m) = marginal, (f) = in forest.

ANGIOSPERMS: DICOTYLEDONS

APOCYNACEAE

Parsonia capsularis (Maori jasmine) (R); 1 (m)

P. heterophylla (Maori jasmine, kaihua) (C); 1 mostly (m)

ARALIACEAE

Pseudopanax arboreus (*Neopanax arboreum*) (five-finger) (C); 1 (m)

P. crassifolius (*P. crassifolium*) (lancewood) (C); 1

Schefflera digitata (pate) (C); 1 damp (m)

ATHEROSPERMATACEAE

Laurelia novae-zelandiae (pukatea) (A); 2, sometimes 1

CAMPANULACEAE

Wahlenbergia gracilis (N.Z. harebell) (O); 1, 8

CARYOPHYLLACEAE

Stellaria parviflora (O); 1, amongst tree roots and on rotten logs

COMPOSITAE

Brachyglottis repanda var. *repanda* (rangiora) (C); 1 (m), on warm banks

Cassinia leptophylla (tauhinu) (O); 1 (m), on warm banks

Cotula coronopifolia (O); 4

Gnaphalium gymnocephalum (cudweed) (O); 1, (f)

G. limosum (cudweed) (O); 4, on wet ground

Olearia rani (heketara) (O); 1 (m), mostly on warm banks

Senecio glomeratus (*Erechtites arguta*) (fireweed) (C); 1, 4, 8, on disturbed ground, mostly (m)

S. hispidulus (*E. scaberula*) (fireweed) (R); 4, in damaged vegetation of swampland

S. minimus (*E. minima*) (fireweed) (C); 1, 4, 8, (m), and in damaged forest

CORIARIACEAE

Coriaria arborea (tutu) (O); 3, 4

CORNACEAE

Griselinia lucida (shining broadleaf) (C) epiphytic in 1, 2; (R) on steep sunny bank in 8

CORYNOCARPACEAE

Corynocarpus laevigatus (karaka) (A); 1

CRUCIFERAE

Cardamine sp. (*C. debilis* Banks ex DC agg.) (O); 1

CUNONIACEAE

Weinmannia racemosa var. *racemosa* (kamahi) (C); 1, mostly (m)

DROSERACEAE

Drosera binata (forked sundew) (O); 8, in seepages on grassy bank

ELAEOCARPACEAE

Aristotelia serrata (wineberry) (O); 1, warm (m)

Elaeocarpus dentatus (hinau) (C); 1

EPACRIDACEAE

Cyathodes juniperina var. (prickly heath) (R); 1, dry (m)

Leucopogon fasciculatus (*Cyathodes fasciculata*) (mingimingi) (R); 1, dry (m)

L. (C.) fraseri (patotara) (O); 8, on dry banks amongst grass

ESCALLONIACEAE

Carpodetus serratus (putaputaweta, marble leaf) (O); 1 (m), 3

GERANIACEAE

- Geranium potentilloides* (R); 1 (f)
Pelargonium inodorum (kopata) (O); 8

HALORAGACEAE

- Haloragis erecta* (shrubby haloragis) (C); 1 (m)
Myriophyllum propinquum (milfoil) (O); 4, 5, on damp edge of platform

HYPERICACEAE

- Hypericum japonicum* (swamp hypericum) (C); 4

ICACINACEAE

- Pennantia corymbosa* (kaikomako) (C); 1

LAURACEAE

- Beilschmiedia tawa* (tawa) (A); 1 (f)

LOBELIACEAE

- Lobelia anceps* (shore lobelia) (C); 4
Pratia angulata (scrambling pratia; panakenake) (C); 1 (m) and in damp places

LOGANIACEAE

- Geniostoma rupestre* var. (*G. ligustrifolium*) (Maori privet, hangehange) (C); 1 (m)

LORANTHACEAE

- Ileostylus (Loranthus) micranthus* (mistletoe) (E); 1

MELIACEAE

- Dysoxylum spectabile* (kohekohe, N.Z. mahogany) (A); 1

MONIMIACEAE

- Hedycarya arborea* (pigeonwood) (C); 1

MORACEAE

- Paratrophis banksii* (large-leaved milk tree) (E); 1
P. microphylla (milk tree, turepo) (C); 1

MYOPORACEAE

- Myoporum laetum* (ngaio) (C); 1

MYRSINACEAE

- Myrsine australis* (mapou) (C); 1 (m)
M. salicina (toro) (R); 2

MYRTACEAE

- Leptospermum ericoides* var. *ericoides* (kanuka) (R); 1, dry, (m)
L. scoparium (manuka) (O); 3
Lophomyrtus bullata (ramarama) (O); 1
L. bullata x *L. obcordata* (O); 1
Metrosideros diffusa (C); 1
M. fulgens (climbing red rata, aka-kura) (A) 1, 2, up tall trees, (m)
M. perforata (small white rata vine, akatea) (C); 1 (m), and on rather dry banks
M. robusta (northern rata) (R) or (E); 1
Syzygium (Eugenia) maire (maire-tawake) (A); 2, 3

OLEACEAE

- Nestegis (Olea) cunninghamii* (black maire) (E); 1
N. (O.) lanceolata (white maire) (R); 1
N. (O.) montana (narrow-leaved maire) (E); 1

ONAGRACEAE

- Epilobium insulare* (O); 4 (m), in swampland, damaged vegetation
E. nummularifolium (O); 8 (m), in water race
E. pallidiflorum (swamp epilobium) (C); (m) of 4 and 5
E. rotundifolium (O); 8, on damp banks, especially of water races
Fuchsia excorticata (tree fuchsia, kotukutuku) (O); 1, 2
F. perscandens (scrambling fuchsia) (R); 1
F. excorticata x *F. perscandens* (hybrid fuchsia) (R); 1

OXALIDACEAE

- Oxalis exilis* (O); 1 (f)

PASSIFLORACEAE

- Passiflora (Tetrapathaea) tetrandra* (kohia, N.Z. passionvine) (C); 1

PIPERACEAE

- Macropiper excelsum* var. *excelsum* (kawakawa, N.Z. pepper) (C); 1

PITTOSPORACEAE

- Pittosporum cornifolium* (perching pittosporum) (O); 2
P. eugenioides (tarata, lemonwood) (O); 1 (m)
P. tenuifolium (kohuhu) (O); 1 (m)

POLYGONACEAE

- Muehlenbeckia australis* (large-leaved muehlenbeckia) (C); 1 (m)
M. complexa (wireweed) (R); 4
Polygonum sp. (*P. decipiens* auct. N.Z.) (swamp willow weed) (C); 4, 5

PROTEACEAE

- Knightia excelsa* (rewarewa) (C); 1 (f)

RANUNCULACEAE

- Clematis paniculata* (puawhanganga) (C); 1
Ranunculus hirtus (kopukapuka) (C); 1, in damp (f)
R. macropus (R); 5
R. rivularis (waoriki) (O); 5

ROSACEAE

- Acaena anserinifolia* (bidibidi) (C); 4, 8, mostly in sunny sites
A. novae-zelandiae (bidibidi) (C); 4, 8, mostly in sunny sites
Rubus australis (swamp lawyer) (C); 2, 3
R. cissoides var. *cissoides* (tataramoa, lawyer) (C); 1, bush and scrub (m)
R. schmidelioides var. *schmidelioides* (lawyer) (C); 1, bush and scrub (m)
R. australis x *R. cissoides* (O); 3

RUBIACEAE

- Coprosma areolata* (C); 1 (f)
C. grandifolia (*C. australis* auct. N.Z.) (kanono) (C); 1, 2
C. lucida (karamu) (O); 1 (m)
C. rhamnoides (O); 1, in dry, rather open sites
C. robusta (karamu) (C); 1, 3, often (m)
C. tenuicaulis (C); 4, in swamp, 3
C. propinqua x *C. robusta* (*C. cunninghamii*) (O); 3
Galium propinquum (O); 1 (f), at roots of trees and on rotten logs
Nertera depressa (C); 1, 8 (f), on rotting logs or on damp banks in the open
N. setulosa (C); 8, dry banks, pastureland or on rotting logs

RUTACEAE

- Melicope simplex* (poataniwha) (C); 1 (f)
M. ternata (wharangi) (R); 1, mostly (m); some near end of Buller Rd., more in forest remnant opposite Murray's, Papaitonga Rd.

SANTALACEAE

- Mida salicifolia* (maire) (E); 1 (f)

SAPINDACEAE

- Alectryon excelsus* (titoki) (C); 1 (f)

SCROPHULARIACEAE

- Gratiola sexdentata* (R); 4
Hebe stricta var. *stricta* (koromiko) (C); 1 (m), 3, 4

SOLANACEAE

- Solanum aviculare* (poroporo) (O); 1 (m)
S. nodiflorum (O); 1, mostly (m)

UMBELLIFERAE

- Centella uniflora* (C); 1, 4, 8, on damp banks, grassy sites
Hydrocotyle heteromeria (*H. americana* auct. N.Z.) (C); 1 (f), in damp muddy areas
H. elongata (C); 1 (f), in drier sites than *H. heteromeria*
H. moschata (C); 1, 8, some (m) in (f), otherwise in open, low pasture
H. novae-zelandiae (C); 4, on wet ground, swamp margin

URTICACEAE

- Elatostema rugosum* (parataniwha) (O); 2
Parietaria debilis (O); 1, 2, mostly in damaged areas
Urtica incisa (nettle) (C); 1, 2, (f)
U. linearifolia (swamp nettle) (O); 5, against shore platform

VIOLACEAE

- Melicytus ramiflorus* (mahoe, whiteywood) (A); 1, (f) or (m)

WINTERACEAE

- Pseudowintera axillaris* (horopito) (R), perhaps (E); 1 (f)

MONOCOTYLEDONS

AGAVACEAE

- Cordyline australis* (cabbage tree) (O); 1, 8
Phormium tenax (N.Z. flax) (A); 3

CYPERACEAE

- Baumea articulata* (O); 5, beside two headlands; not seen elsewhere in this district
B. rubiginosa (O); 4
B. tenax (O); 4
Carex dissita (A); 1 (f)
C. geminata (C); 4, in damaged swampland
C. lambertiana (O); 1
C. lessoniana (C); 4
C. maorica (O); 4, on damp margin
C. secta var. *secta* (C); 3, some remain in open cleared swampland also
C. solandri (O); 1
C. testacea (R); 1, on sunny (m)
C. virgata (C); 3, in drier parts than *C. secta*
Cyperus ustulatus (toetoe-upoko-tangata) (C); 4, on damp ground
Eleocharis acuta (C); 4, and in cleared swampland
E. gracilis (O); 4
Gahnia pauciflora (R); 1 (f), on bank with some sunshine
G. xanthocarpa (A); 3
Schoenus maschalinus (O); 4, on shore platform and in cleared swampland
Scirpus fluviatilis (R); 5
S. lacustris (A); 5
S. prolifer (A); 4, 5
Uncinia banksii (hookgrass) (R); 1 (f)
U. clavata (hookgrass) (R); 1 (f)
U. ferruginea (hookgrass) (O); 1 (f)
U. scabra (hookgrass) (R); 1 (f)
U. uncinata (hookgrass) (A); 1 (f)

GRAMINEAE

- Cortaderia toetoe* (toetoe) (A); 3
Echinopogon ovatus (hedgehog grass) (O); 1, in dry (f)
Microlaena avenacea (bush ricegrass) (A); 1 (f)
M. stipoides (meadow ricegrass) (A); 1, 8 (m), or rather open sites
Optimemus imbecillus (C); 1 (f)
Poa anceps var. *anceps* (C); 1, on warm banks or (m)

IRIDACEAE

- Liberia ixioides* (native iris, mikoikoi) (C); 1 (m), on sunny banks

JUNCACEAE

- Juncus australis* (O)-(C); 8, in damp pasture
J. gregiflorus (O)-(C); 8, in damp pastures
J. pallidus (O)-(C); 8, in damp pastures
J. planifolius (C); 4, 8, (m) to swamps, banks of watercourses
J. sarophorus (C); 4, in wetter pastures
Luzula sp. (R); 1 (f) (not seen in flower)

JUNCAGINACEAE

- Triglochin striatum* (R); 4

LEMNACEAE

- Lemna minor* (duckweed) (C); 6
Wolffia australiana (watermeal) (R); 6

LILIACEAE

- Arthropodium candidum* (O); 1, in dry (f), amongst tree roots
Astelia grandis (swamp astelia) (C); 3
A. solandri (kowharawhara) (C); 1, 2
Collospermum hastatum (kahakaha) (A); 1, 2
Dianella nigra (blueberry, turutu) (C); 1 (f), generally on warm banks

ORCHIDACEAE

- Bulbophyllum pygmaeum* (R); 1, on tall tawa
B. tuberculatum (R); 1, on tall tawa
Corybas trilobus (spider orchid) (now R); 1
C. sp. (leaf only; could be *C. orbiculatus*) (E); 2
Dendrobium cunninghamii (hirituriti, butterfly orchid) (R); 1
Drymoanthus adversus (used to be C, now perhaps E); 1
Earina autumnalis (raupeka, sweet-scented earina) (O); 1
E. mucronata (peka-a-waka, sharp-pointed earina) (O); 1
Gastrodia cunninghamii (huperei) (E); 1

- Microtis unifolia* (Maori onion) (C); 8, on sunny banks
Orthoceras strictum (R); 8
Pterostylis banksii (large greenhood orchid) (R); 4, previously in 1
P. montana (E) 1, rather sunny bank
- PALMAE
Rhopalostylis sapida (nikau palm) (A); 1
- PANDANACEAE
Freycinetia baueriana ssp. *banksii* (*Freycinetia banksii*) (kiekie) (A); 2
- POTAMOGETONACEAE
Potamogeton cheesemanii (R); 8, in water race
- SMILACACEAE
Ripogonum scandens (kareao, supple jack) (A); 1, 2
- SPARGANIACEAE
Sparganium subglobosum (bur reed) (O); 4 (m), in damaged swamp vegetation
- TYPHACEAE
Typha orientalis (raupo) (A); 3, 5

GYMNOSPERMS

- PODOCARPACEAE
Dacrycarpus (Podocarpus) dacrydioides (kahikatea) (A); 2
Dacrydium cupressinum (rimu) (O); 1
Podocarpus totara (totara) (O); 1
Prumnopitys ferruginea (Podocarpus ferrugineus) (miro) (O); 1
P. taxifolia (Podocarpus spicatus) (matai) (O); 1

FERNS

- Adiantum cunninghamii* (common maidenhair) (C); 1 (m), on warm banks
Alsophila tricolor (Cyathea dealbata) (ponga, silver tree fern) (C); 1
Anarthropteris lanceolata (C); 1, 2, on sheltered sides of trees
Arthropteris tenella (R); 1, formerly abundant throughout, now almost absent
Asplenium bulbiferum ssp. *bulbiferum* (hen and chicken fern) (A); 1
A. bulbiferum ssp. *gracillimum* (A); 1 (two forms present, agreeing with forms A and D of Brownsey?; found in homogeneous colonies)
A. flaccidum ssp. *flaccidum* (drooping spleenwort) (A); 1, both terrestrial and epiphytic plants
A. hookerianum (Hooker's spleenwort) (O); 1, in dry places, amongst tree roots and (m) on banks
A. oblongifolium (A. lucidum) (shining spleenwort) (A); 1, 2, sometimes epiphytic
A. polyodon (A. falcatum) (A); 1, 2, mostly epiphytic, or on rotting logs, or on *Collospermum* bases
A. bulbiferum ssp. x *A. flaccidum* ssp. *flaccidum* (O) 1 (different forms present; possibly there are hybrids involving both subspecies of *A. bulbiferum*).
A. flaccidum ssp. *flaccidum* x *A. hookerianum* (R); 1
Azolla rubra (floating water fern) (O); 6, in sheltered water
Blechnum chambersii (B. lanceolatum) (O); 1, 2, 8, on damp banks and sides of water race
B. discolor (crown fern) (O); 1, 2, 8, on damp banks
B. minus (included in *B. capense* by Allan, 1961) (O); 3(?), 4, in open, boggy places and on margin of water race. Tall plants of kiokio in deep swamp (3) may belong to *B. minus* or to *B. sp* (b), below; there seems to be gradation from smallish plants on stream-sides to very tall ones.
B. penna-marina (R); 8, one location only, on unploughed bank beneath fence, Buller Rd.
B. sp. (a) (unnamed), *B. minus sensu* Allan, 1961; *Lomaria latifolia* Col. (O); 1, 8
B. sp. (b) (kiokio) (unnamed, *B. capense* agg.), common lowland bank species, (A); 1, 4, 8, on damp banks and sides of water races
Botrychium australe (parsley fern) (E); 1
Dicksonia fibrosa (wheki-ponga) (R); 1
D. squarrosa (wheki) (O); 1 (m), in damp parts
Diplazium (Athyrium) australe (chevron fern) (R); 4, on south side of lake in damp forest remnant at lake margin
Doodia sp. (R); 8, sporelings sometimes grow on banks of water races and drains near Papaitonga
Gleichenia microphylla (umbrella fern) (R); 3

Histiopteris incisa (water fern) (O); 1, 2, in damp situations
Hymenophyllum bivalve (R); 1, 2, in the dampest and most sheltered parts only
H. demissum (C); 1, both terrestrial and epiphytic
H. ferrugineum (O); 1, 2, on sheltered side of tree ferns, in damp atmosphere
H. flabellatum (O); 1, 2, on sheltered side of tree ferns, in damp atmosphere
H. multifidum (O); 1, 2, where the atmosphere is damp
H. revolutum (O); 1, 2, associated with *H. ferrugineum* and *H. flabellatum*
H. sanguinolentum (O); 1, 2, where the atmosphere is damp
Hypolepis distans (C); 3, in fibrous bases of flax and nigger-heads
H. rufobarbata (O); 1
H. ambigua (*H. tenuifolia* auct. N.Z.) (C); 1 (m)
Lastreopsis glabella (O); 1
L. hispida (C); 1
L. microsora (O); 1
Leptopteris (*Todea*) *hymenophylloides* (single crepe fern) (O); 1
Paesia scaberula (C); 1, 4, 8 (m), or on rotten logs, or in open, on drainsides and banks
Pellaea rotundifolia (O); 1, in dry places, amongst tree roots and (m) on banks
Phymatosorus diversifolius (*Phymatodes diversifolium*) (C); 1, 8
P. scandens (*Phymatodes scandens*) (C); 1
Pneumatopteris (*Thelypteris*) *pennigera* (O); 1, 2, in damp sites, sometimes (m)
Polystichum richardii (O); 1, on banks and in dry sites
Pteridium esculentum (bracken fern) (A); 1, 8 (m)
Pteris pendula (*P. macilentata* auct. N.Z.) (O); 1
P. tremula (C); 1
Pyrosia serpens (A); 1, 8, epiphytic
Rumohra adiantiformis (C); 1, 2, epiphytic
Sphaeropteris (*Cyathea*) *medullaris* (mamaku, black tree fern) (A); 1
Trichomanes reniforme (kidney fern) (O); 1, 2, in damp situations
T. venosum (O); 2, associated with *Hymenophyllum ferrugineum*, *H. flabellatum* and *H. revolutum* on sheltered side of tree ferns in damp air

FERN ALLIES

Lycopodium varium (including *L. billardieri* and *L. novae-zelandiae*) (O); 2, occurring in two epiphytic forms
Tmesipteris elongata (included in *T. tannensis* by Allan, 1961) (O); 2

FOOTNOTES

Cyathea cunninghamii has sometimes been listed for this reserve, but is omitted from this record as no specimen has been identified from here, and as yet there is no proof of its being elsewhere in the district.

The following native plants are adventives here:

Hoheria populnea: several, probably from seed brought in with garden rubbish.
Pseudopanax hybrids: various forms common in the immediate district from plants supplied by nurseries under the name "*Pseudopanax crassifolium* var. *trifoliolatum*". They produce many viable seeds, freely distributed by birds, and no two plants are alike.
Solanum laciniatum: another bird-distributed species from neighbouring gardens. Not native in this part of the district. There is a fine kauri tree near the southern shore. Judging by its size and comparing it with one in Levin, it would have been planted about 1907, perhaps by or for Sir Walter Buller as it is near the site of the original homestead. The exotic plants, *Spirodela punctata* (*S. oligorrhiza*) (purple-backed duckweed), (O); 6, and *Callitriche stagnalis* (starwort), (A); 4, 8, were formerly listed as native, but have been deleted from this list.

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Cabbage Trees

James Beaver, Auckland

In September 1981 the Wellington Botanical Society Bulletin contained an article, "The Origin of the Name Cabbage Tree for Cordyline Species in New Zealand" which I had contributed. Less than two years later the publication of "The Resolution Journal of J. R. Forster", ed. Michael E. Hoare by The Hakluyt Society, London 1982, revealed information that has confirmed fully the main premise of my article. This was that our modern use of Cabbage Tree for Cordylines stems from the earliest sailors to visit New Zealand, who, when confronted by this new tree which looked to them like a palm mistakenly called it by their usual name for a palm viz. "a cabbage tree".

In his journal, J. R. Forster refers to Cordylines more than once, of which the following quotations are typical.

Dusky Bay. May 7th 1773 . . . "we met with a great many Cabbage-palm trees as they were commonly called by our sailors, but upon examination we found them to be a kind of Dragon tree (*Dracaena* Linn.): for we met with fruit and flowers of them . . ."

Later (p277 Hoare 1982), summarising work at Dusky Bay he writes, ". . . with an infinite variety of high trees and shrubbery, among which the New Zealand Dragon-tree (*Dracaena antarctica*) is very remarkable. (N.B. our sailors called them the Cabbage-Palm but it is different; though the middle most leaves may be eaten and taste almost like sweet fresh almonds)."

November 9th 1773. Queen Charlotte Sound. "George and Mr Sparman went out to Indian Cove and George shot two curlews and discovered a new *Dracaena* in flower, but they were not able to get it for want of a hatchet . . . The next morning the weather was very fine, and I went with Mr Sparman and my son to the Indian Cove, where we got the *Dracaena*, having taken a hatchet with us. This *Dracaena* is a kind of tree about 15 or 20 feet high: the Stem was rough and naked, the branches are soft and spongy and have still the marks of the places, where the leaves have been growing to it; these are in tufts at the top of