THE BOTANY OF NYDIA BAY, PELORUS SOUND, MARLBOROUGH

PARTICIPANTS IN THE 1999 C.B.S. SUMMER CAMP
(See list at end of this account)

Introduction

The Society's 1999 summer camp at Nydia Lodge, a Department of Conservation facility on the south-west margin of Pelorus Sound (Fig. 1) was attended by 27 members, relatives and friends and two very welcome visitors from the Nelson Botanical Society (see Appendix 1, the list of participants). The main party was brought by launch from Havelock to the jetty below the Lodge in the late afternoon of the 2nd January. Much of our luggage was hauled up the hill with a small tractor and trailer, by the caretaker, Murray Timbs', son-in-law and helpers. The Nelsonians walked in over the Kaiuma Saddle later in the week.

The Lodge is well-appointed, with a central dining area/kitchen and separate ablution and bunk room blocks. Cooking and water heating are by gas and a generator provides for lighting and refrigeration needs. Phone calls to Havelock enable stores to be brought on the mail launch. We soon settled in, with a routine for duties and excellent cuisine.

Botany begins within metres of the Lodge. The vegetation is dense and we didn't venture far from the established tracks. A check out/in system avoided worries about lost people. Our programme was:

3rd Jan. Exploration of the scrub and a good patch of tall bush near the Lodge.

4th Jan. Old logging track to the valley under Opouri Peak.

5th Jan. On the walkway track around the bay head and up to Nydia Saddle where we met Roger and Gwen Bray and friends, all of whom came down with us to Nydia Bay, then back over the saddle to their cottages at Tennyson Inlet.

6th Jan. Some of the party went up the walkway track to Kaiuma Saddle, the rest worked on plants.

7th Jan. Examining the estuaries around Nydia Bay.

8th Jan. Concentrated sessions on monocot. herbs and ferns.

9th Jan. By launch to Maud Island (learning about the bird conservation projects there, and seeing large insects, frogs, tuis, a tame takahe and some unfamiliar plants), then return to Havelock.

We experienced brilliantly fine, hot weather until a south-westerly front came through on the 8th, dropping some much-needed rain and cooling us off, after what can only be described as a scorching week. Fortunately, we were able to escape the sun by early starts and botanizing in the tall scrub and bush.

Landscape and Vegetation

Open grassy areas are limited to a small mown area around the Lodge and the farms on relatively level land in valleys at the head of the bay. The stony shore and muddy bay head and estuaries of small streams are also accessible at low tide. The terrain, otherwise, is quite rugged, with Opouri (920 m) and Kaiuma (976 m) Peaks on surrounding ridges. On the walkway track Tennyson Inlet (N) – Nydia Bay – Kaiuma Bay (S) respectively, the Nydia and Kaiuma Saddles are 375 m and 387 m high. The streams in Nydia Bay are gorged, with waterfalls in their upper reaches, and bouldery beds.

Nydia Bay has a more complete native tall forest cover than many other parts of the Marlborough Sounds, especially on its northern side where bush descends to sea level. The tall forest in the bay otherwise is confined to areas from midslopes to the ridge-line in the several separate small valley heads. Hard beech (*Nothofagus truncata*) is the main large tree but podocarps and many angiosperm trees accompany it and there is a rich and tangled understorey with much supplejack, kiekie, rata vine and fern. At higher levels other beeches, red, silver and mountain appear in the forest. Black beech occurs near sea level.

Most of the lower slopes are clad in kanuka and manuka stands of varied age, with associated young broadleaved trees, dense tree-fern, ground fern, shrub species and gahnia, making access quite difficult. Bracken is prominent on the farmland and the estuaries have shrubby margins and dense stands of rushes, restiads and (above salt-water level) sedges and ferns.

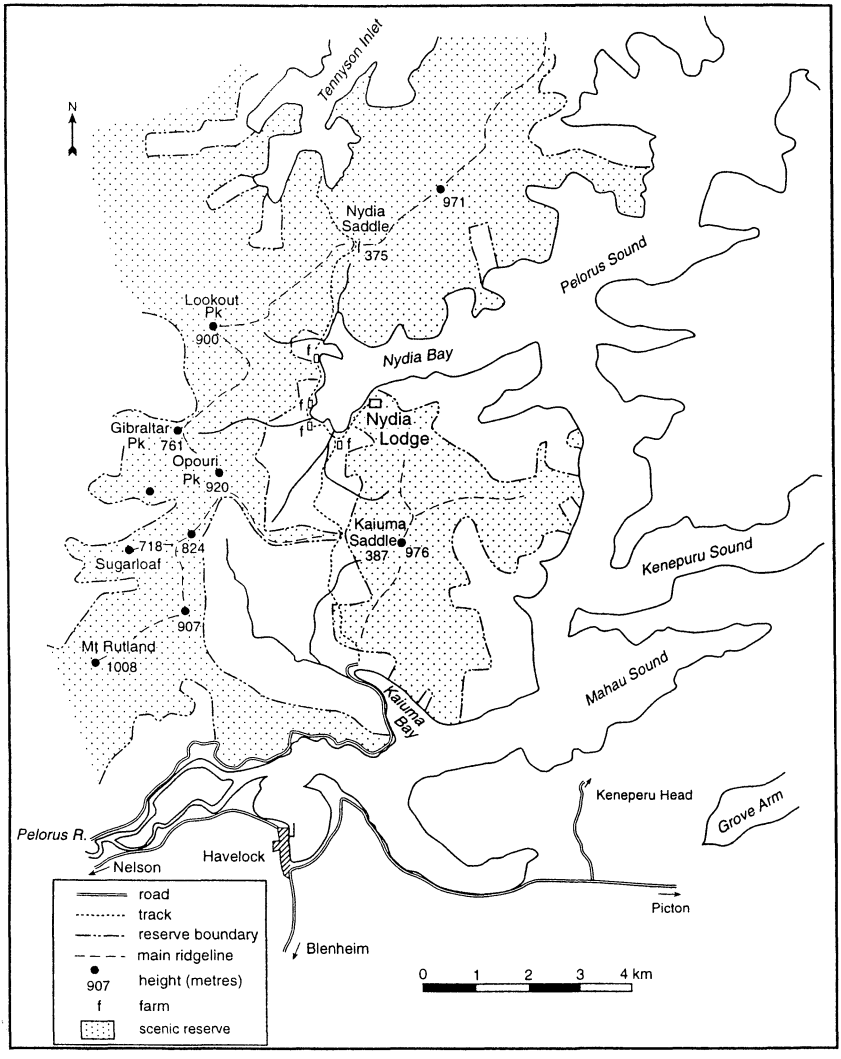

Fig. 1. Location of Nydia Bay.

Some pine forestry developments occur around the bay and pines are common as wildings in the tall scrub communities. Around the farms are extensive exotic plantings. One abandoned farm house has a particularly interesting assemblage of species. Various woody weeds are common in these locations (see article by Bill Sykes in this volume).

The Flora

We had a basic checklist for the area around Nydia Bay and Tennyson Inlet, drawn from the Scenic Reserves of Marlborough descriptions (Walls, 1984). We checked off species as we observed them and added many taxa to the list, especially shrubs, ferns and herbs. These are all recorded in Table 1. It is evident that the area is particularly rich in ferns and monocot herbs. We listed especially interesting "finds of the day" after each excursion. The compilation in this article is confined to indigenous plants mainly because of the limited time we had in the area. However, Bill Sykes made a list of many of the exotic species and his article covers the woody species. Some specimens, native and exotic, will find their way into the herbaria CHR (Landcare) and CANU (Plant and Microbial Sciences, University of Canterbury). Help with local knowledge from Graeme Jane was very valuable for identification of some taxa. Contact with the Brays was helpful too, especially for recognising vegetation on abandoned farmland; they have 30 years' experience in the region (see C.B.S.J. 32, 1998).

Conclusions

Nydia Bay proved to be a very good place for our purposes. There were lots of interesting plants, many of them very close at hand. Basil O'Connor's small microscope was very useful for looking at fern sori or *Zostera* pods or sedge flowers; otherwise hand lenses were adequate for most of our studies.

The floristic list (Table 1) tells the story of the vigour of our botanical endeavours. For all of us there were botanical challenges and we all came away feeling that we'd learnt a lot. A few specific points can be made: it was noticeable that some species live at high levels 300-400 m a.s.l. on ridges and rock outcrops and also on cliffs and other open sites near sea level but not in between (e.g. southern rata (*Metrosideros umbellata*); silver beech *Nothofagus menziesii* (rare at sea level); and large-flowered iris *Libertia grandiflora*).

Some other species are very locally distributed: turepo (*Streblus heterophyllus*) (1 plant seen); raukawa (*Pseudopanax edgerleyi*) (1 plant seen); titoki (*Alectryon excelsum*) (a few plants in each of 3 sites); furry lycopod (*Lycopodium cernuum*) (one patch); fan fern (*Lindsaea linearis*) (one location, several patches).

Some taxa, with southern limits in the eastern South Island in the Marlborough Sounds, are common at Nydia Bay: pukatea (*Laurelia novae-zelandiae*); ramarama (*Lophomyrtus bullata*); orange rata vine (*Metrosideros fulgens*); hekatara (*Olearia rani*); horopito (*Pseudowintera axillaris*) ; thread fern (*Blechnum filiforme*); deceptive fern (*Diplazium australe*). At Maud Island we saw a big stand of kohekohe (*Dysoxylum spectabile*) and, very interestingly, planted and adventive puriri (*Vitex lucens*) far south of its southern limit.

Judged by comments at the end of the camp the participants were well-satisfied. Not least of the pleasures were the very convivial company and the great cuisine. The trip to Maud Island was a pleasant bonus enabling us to see more of the Sounds (with some long-distance identifications of interesting plants!). En route we saw a gannet colony at close quarters and arctic skuas trying to force white-fronted terns to disgorge their catches. Birdlife at Nydia Bay was rather sparse, possibly because of the heat and dry conditions. We saw a few bellbirds, tuis, fantails, silvereyes, grey warblers, kereru and a single robin in the bush and various seabirds and waterfowl in the bay.

Reference

Walls, G. 1984. *Scenic and Allied Reserves of the Marlborough Sounds*: A Biological Survey of Reserves in the Marlborough Land District North of the Wairau River. Biological Survey of Reserves Series No 13, Department of Lands and Survey, Wellington

Table 1. Checklist of Vascular Plants Identified from Nydia Bay

* F – forest; VF – valley-floor forest; HF – hillslope forest; S – scrub (mainly manuka, kanuka and small areas of forest margin and estuary margin); E – estuary salt marsh; W – freshwater wetland; ep – epiphyte

Trees	Family	Habitat*
Conifers		
Dacrycarpus dacrydioides	Podoc.	VF
Dacrydium cupressinum	Podoc.	VF, HF
Podocarpus totara	Podoc.	VF, HF
Prumnopitys ferruginea	Podoc.	VF, HF
P. taxifolia	Podoc.	VF
Dicots		
Alectryon excelsum	Sapind.	VF
Aristotelia serrata	Elaeoc.	F, S
Beilschmiedia tawa	Laur.	VF, HF
Carpodetus serratus	Escall.	F, S
Dodonaea viscosa	Sapind.	S
Elaeocarpus dentatus	Elaeoc.	VF, HF
E. hookerianus	Elaeoc.	VF
Fuchsia excorticata	Onag.	F, S
Griselinia littoralis	Gris.	F, S
G. lucida	Gris.	VF (ep)
Hedycarya arborea	Monim.	VF
Kunzea ericoides	Myrt.	S
Laurelia novae-zelandiae	Monim.	VF, HF
Melicytus ramiflorus	Viol.	F
Metrosideros umbellata	Myrt.	HF, S
Myrsine australis	Myrs.	F, S
Nothofagus fusca	Fag.	HF
N. menziesii	Fag.	HF, S
N. solandri var. *cliffortioides*	Fag.	HF
N. solandri var. *solandri*	Fag.	S
N. truncata	Fag.	HF
Pennantia corymbosa	Icac.	F, S
Pittosporum colensoi	Pitto.	S
P. eugenioides	Pitto.	F, S
P. tenuifolium	Pitto.	F, S
Pseudopanax arboreus	Aral.	F, S
P. crassifolius	Aral.	HF
P. edgerleyi	Aral.	HF
Pseudowintera axillaris	Wint.	HF
Schefflera digitata	Aral.	F, S
Streblus heterophyllus	Mor.	VF
Weinmannia racemosa	Cunon.	VF, HF
Monocots		
Rhopalostylis sapida	Arec.	HF
Shrubs		
Dicots		
Brachyglottis repanda	Aster.	VF, S
Carmichaelia australis	Papil.	S
Coprosma areolata	Rub.	F, S
C. foetidissima	Rub.	HF
C. grandifolia	Rub.	F, S
C. lucida	Rub.	F
C. microcarpa	Rub.	HF
C. cf. parviflora (species T)	Rub.	S
C. propinqua	Rub.	S
C. rhamnoides	Rub.	F
C. robusta	Rub.	S
C. robusta x *propinqua*	Rub.	S
C. rotundifolia	Rub.	VF
Coriaria arborea	Cor.	S
Cyathodesjuniperina	Epacr.	S
Gaultheria antipoda	Eric.	S
Hebe stricta	Scroph.	S
Leucopogon fasciculatus	Epacr.	S
Leptospermum scoparium	Myrt.	S

Lophomyrtus bullata	Myrt.	F, S
L. bullata x *obcordata*	Myrt.	S
Melicytus alpinus	Viol.	S
M. micranthus	Malv.	VF, S
Neomyrtus pedunculata	Myrt.	HF
Olearia paniculata	Aster.	S
O. rani	Aster.	F
O. solandri	Aster.	S (E)
Ozothamnus leptophylla	Aster.	S
Plagianthus divaricatus	Malv.	S (E)
Pseudowintera colorata	Wint.	HF
Pseudopanax colensoi	Aral.	HF
Solanum laciniatum	Sol.	S
Vines		
Dicots		
Calystegia tuguriorum	Conv.	S
Clematis paniculata	Ran.	F, S
Metrosideros diffusa	Myrt.	F
M. fulgens	Myrt.	F
M. perforata	Myrt.	F
Muehlenbeckia australis	Polyg.	F, S
M. australis x *complexa*	Polyg.	S
M. complexa	Polyg.	S
Parsonsia heterophylla	Apoc.	S
Passiflora tetrandra	Passif.	F
Rubus australis	Ros.	F, S
R. cissoides	Ros.	S
R. schmidelioides	Ros.	S
Monocots		
Cordyline banksii	Lom.	VF, S
Freycinetia baueriana	Pand.	VF, HF
Ripogonum scandens	Rip.	F
Parasites		
Dicots		
Ileostylus micranthus	Lor.	S (E)
Korthalsella lindsayi	Visc.	S (E)
Herbs		
Dicots		
Acaena anserinifolia	Ros.	S
A. novae-zelandiae	Ros.	S
Anaphalioides bellidioides	Aster.	S
Apium filiforme	Ap.	E
Cardamine debilis	Brassic.	F
Centella uniflora	Ap.	S
Cotula coronopifolia	Aster.	E
Dichondra repens	Conv.	S
Epilobium pedunculatum	Onag.	S
E. pubens	Onag.	S
Euchiton gymnocephalus	Aster.	S
Geranium microphyllum	Geran.	S
Gonocarpus micranthus	Halor.	S
G. montanus	Halor.	S
Haloragis erecta.	Halor.	S
Helichrysum filicaule	Aster.	S
Hydrocotyle dissecta	Ap.	S
H. moschata	Ap.	S
*H.*cf. *heteromeria*	Ap.	S
Lagenifera petiolata	Aster.	S
Leptinella dioica	Aster.	S
Lilaeopsis novae-zelandiae	Ap.	E
Lobelia anceps	Lobel.	S
Mentha cunninghamii	Lam.	S
Nertera depressa	Rub.	S, F
N. setulosa	Rub.	S
Oxalis exilis	Oxal.	S
Pseudognaphalium luteoalbum	Aster.	S
Ranunculus reflexus	Ran.	F, S
Samolus repens	Prim.	E
Sarcocornia quinqueflora	Cheno.	E
Selliera radicans	Gooden.	E
Stellaria parviflora	Caryo.	S

Urtica incisa	Urti.	F
Wahlenbergia gracilis	Campan.	S
Monocots		
Astelia fragrans	Astel.	F, S
A. solandri	Astel.	F (ep)
Baumea rubiginosa	Cyper.	W
Caladenia chlorostyla	Orchid.	S
Carex dipsacea	Cyper.	E
C. dissita	Cyper.	F, S
C. flagellifera	Cyper.	E
C. geminata	Cyper.	F, S
C. lambertiana	Cyper.	F, S
C. lessoniana	Cyper.	F, S
C. forsteri	Cyper.	S
C. raoulii	Cyper.	S
C. virgata	Cyper.	W
Chiloglottis cornuta	Orchid.	S
Collospermum hastatum	Astel.	V, F (ep)
Cortaderia richardii	Poa.	S
Corybas oblongus	Orchid.	S
Cyperus ustulatus	Cyper.	W
Dianella nigra	Phorm.	F, S
Dichelachne crinita	Poa.	S
Earina autumnalis	Orchid.	V, F (ep)
E. mucronata	Orchid.	V, F (ep)
Eleocharis acuta	Cyper.	W
E. gracilis	Cyper.	E
Gahnia pauciflora	Cyper.	F, S
G. setifolia	Cyper.	F, S
Gastrodia sesamoides	Orchid.	S
Isolepis aucklandicus	Cyper.	W
I. cernuus	Cyper.	E
I. distigmatosus	Cyper.	W
I. nodosus	Cyper.	E
Juncus gregiflorus	Junc.	W
J. maritimus	Junc.	E
J. pallidus	Junc.	W
J. planifolius	Junc.	W
J. usitatus	Junc.	W
Lachnagrostis sp.	Poa.	W
Lepidosperma australe	Cyper.	S
Leptocarpus similis	Restion.	E
Libertia grandiflora	Irid.	HF, S
Luzula picta	Junc.	S
L. rufa	Junc.	S
Microlaena avenacea	Poa.	F, S
M. stipoides	Poa.	S
Microtis unifolia	Orchid.	S
Orthoceras strictum	Orchid.	S
Phormium tenax	Phorm.	W
Poa cita	Poa.	S
P. sp. cf. *maia*	Poa.	S
Prasophyllum nudum	Orchid.	S
Pterostylis banksii	Orchid.	S
P. graminea	Orchid.	S
Puccinellia stricta	Poa.	E
Rytidosperma gracile	Poa.	S
Schoenus apogon	Cyper.	S
Thelymitra longifolia	Orchid.	S
T. pulchella	Orchid.	S
Triglochin striatum	Juncag.	E
Uncinia gracilenta	Cyper.	S
U. rupestris	Cyper.	S
U. uncinata	Cyper.	F, S
U. zotovii	Cyper.	S
Zostera nova zelandica	Zoster.	E
Ferns		
Anarthropteris lanceolata	Grammit.	VF, HF
Asplenium bulbiferum	Asplen.	F, S
A. hookerianum	Asplen.	HF
A. polyodon	Asplen.	VF
A. flaccidum	Asplen.	F

A. oblongifolium	Asplen.	VF
Blechnum chambersii	Blechn.	F
B. discolor	Blechn.	F, S
B. filiforme	Blechn.	VF
B. fluviatile	Blechn.	F
B. nigrum	Blechn.	HF
B. novae-zelandiae	Blechn.	F, S
B. penna-marina	Blechn.	S
B. procerum	Blechn.	W
B. vulcanicum	Blechn.	S
Cyathea cunninghamii	Cyath.	F, S
C. dealbata	Cyath.	F, S
C. medullaris	Cyath.	F, S
C. smithii	Cyath.	F, S
Dicksonia fibrosa	Dickson.	F
D. squarrosa	Dickson.	F, S
Diplazium australe	Dryoptr.	S
Grammitis billardierei	Grammit.	F
G. ciliata	Grammit.	F
Histiopteris incisa	Dennst.	S
Hymenophyllum bivalve	Hymeno.	VF
H. demissum	Hymeno.	VF
H. dilatatum	Hymeno.	VF
H. ferrugineum	Hymeno.	VF
H. flabellatum	Hymeno.	VF
H. flexuosum	Hymeno.	VF
H. multifidum	Hymeno.	F, S
H. rarum	Hymeno.	VF
H. revolutum	Hymeno.	VF
H. sanguinolentum	Hymeno.	VF
H. scabrum	Hymeno.	VF
Hypolepis ambigua	Dennst.	S
H. lactea	Dennst.	S
Lastreopsis glabella	Dryopt.	VF
L. hispida	Dryopt.	VF
L. microsora	Dryopt.	VF
Leptolepia novae-zelandiae	Dennst.	VF
Leptopteris hymenophylloides	Dennst.	F
Lindsaea linearis	Dryopt.	S
L. trichomanoides	Dryopt.	HF
Paesia scaberula	Dryopt.	S
Pellaea rotundifolia	Pterid.	HF
Phymatosorus pustulatus	Polypod.	F
P. scandens	Polypod.	F
Pneumatopteris pennigera	Thelypt.	VF
Polystichum richardii	Dryopt.	F
P. vestitum	Dryopt.	F
Pteridium esculentum	Dennst.	S
Pteris macilenta	Pterid.	S, F
Pyrrosia eleagnifolia	Polypod.	F
Rumohra adiantiformis	Dryopt.	V, F (ep)
Sticherus cunninghamii	Gleichen.	S, F
Trichomanes reniforme	Hymeno.	VF, HF
T. venosum	Hymeno.	VF, HF
Lycopods		
Lycopodium cernuum	Lycop.	S
L. scariosum	Lycop.	S
L. varium	Lycop.	F
L. volubile	Lycop.	S
Psilophyte		
Tmesipteris elongata	Psilot.	VF

Appendix 1: Personnel at the Camp

Margaret & Jack Austin
Colin Burrows
Tessa David
Ron Felzer
Graeme Jane (Nelson)
Marcus King
Fiona & David Lees
Julie McLintock (Nelson)
Bryony Macmillan
Anne McMillan
Pat Morris
Basil O'Connor
Ruth & Dennis Parkyn
Colin Parkyn
Richard Pender
Fraser Ross
Marion & John Saxton
Peggy & Bill Sykes
Joy Talbot & Aiden (7)
Jonet & Tony Ward
Melanie White & Lucy (2)

NOTE: THE WORRYING SPREAD OF CORD GRASS (*SPARTINA ANGLICA*)

During the Nydia Bay expedition we saw vast areas of *Spartina* in Pelorus Sound close to Havelock. This salt-tolerant invasive grass is well-known as a modifier of the ecology of coastal estuarine mudflats and salt marshes. A few patches of it were found at the head of Nydia Bay; Murray Timbs promised that he would remove them.

The species is well-established in the Avon-Heathcote Estuary, though control efforts have kept it in check there to a considerable degree. Cause for concern is its occurrence in sites near Governor's Bay, Teddington and Charteris Bay in Lyttelton Harbour (see Wilson, 1999, this volume). Strenuous attempts are needed to kill it out before it gets away on the extensive mudflats of this area.

Colin Burrows