

UNIQUE BANKS PENINSULA

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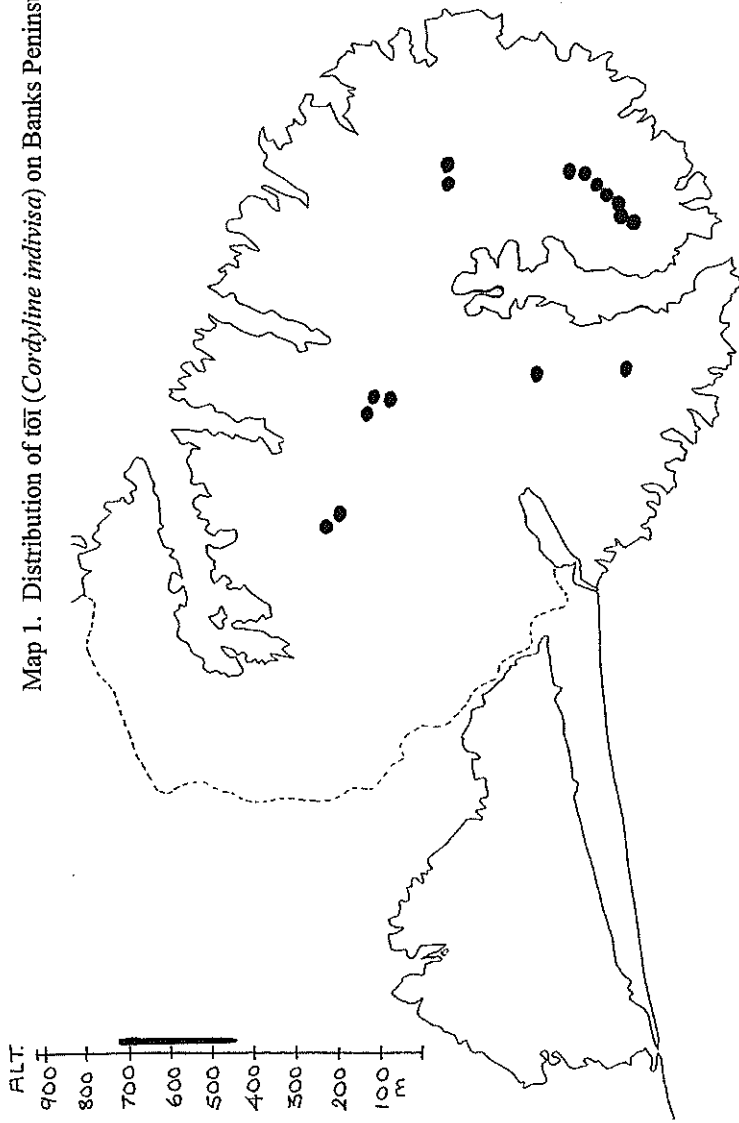
Every place in the world is unique, although uniqueness is a quality easily degraded, in this age of globalism, by insidious processes of cultural and ecological homogenisation.

Banks Peninsula is certainly a unique place, but the quality of its uniqueness has been much diluted since Polynesian voyagers first set eyes upon it centuries ago, and since later voyagers from Europe brought with them, among other things, matches, rats, sheep, cattle, sparrows and starlings. As a result we swapped moas and eagles that were known from nowhere else on the planet, for cows and sparrows, now almost ubiquitous across the temperate world. We took the unique flora of Banks Peninsula into our little, hot, busy, meddling hands, burned and grazed it out of easy recognition, added numerous exotic grasses, trees and flowers, and gave it all a good stir to get a nice, bland, uniform emulsion.

Fortunately, Nature is too robust and resilient to let us homogenise her vibrant diversity into too bland a greyness. In this article I pick out some of the Peninsula's unique aspects among its 550 or so native vascular plant species, aspects that are still easy to see despite the hugely modified landscape. I offer a brief summary of what we now know about plants on Banks Peninsula that are endemic (unique) here, and those that reach their natural southern and northern limits of distribution on these hills.

Banks Peninsula was an island for much of its geological history, and is still island-like today, surrounded on three sides by ocean and on its western side by the flat, low-lying Canterbury Plains. This history of isolation is reflected in half a dozen or so **endemic** species (List 1). The Peninsula is also well-known as the **southern** limit for quite a large number of northern taxa (List 2). Far fewer species find their **northern** limit here (List 3).

I also draw attention to two other groups of plants, in relation to the uniqueness of Banks Peninsula. Firstly, its flora includes some species with populations here that are remarkably distant from the nearest populations elsewhere. Tōi (*Cordyline indivisa*) is an outstanding example. So far as I know the Banks Peninsula population of tōi (Map 1) is the only one in Canterbury; one must go west of the Main Divide to

Map 1. Distribution of tōi (*Cordyline indivisa*) on Banks Peninsula.

meet tōi again. (If anyone knows better I would love to be corrected!) Other Banks Peninsula populations significantly isolated from the nearest populations of the same species elsewhere include pāhautea or cedar (*Libocedrus bidwillii*), miro (*Prumnopitys ferruginea*), nīkau palm (*Rhopalostylis sapida*), raukawa (*Raukawa edgerleyi*), mamaku (*Cyathea medullaris*) and the beeches (*Nothofagus*).

Secondly, there is a group of plants that are nationally rare but with substantial populations on Banks Peninsula. These are listed in Wilson (2001), and include such species as fierce lancewood (*Pseudopanax ferox*) and climbing groundsel (*Brachyglottis sciadophila*). This has little to do with historical survival of original vegetation -- indeed, more than 99% of the original forest cover was destroyed by human settlement -- but has more to do with the Peninsula's distinctive patterns of topography, rainfall, temperature and soil fertility.

Banks Peninsula is climatically unique in Canterbury. Its relief and the surrounding seas give it overall an oceanic climate, but the climatic zones range from maritime cool temperate upwards to subalpine (Wilson 1993). There are coastal microclimates where frost is light or almost non-existent, but a least some snow falls every year on higher ground. Average annual rainfall ranges from a dry outer perimeter with values as low as 500 mm, to moist high summits where the values approach 2000 mm.

The coastal hills of North Canterbury, some 45 km northwards, have the most similar environment to that of the Peninsula, but a number of Banks Peninsula's distinctive species (e.g. nīkau, raukawa, *Olearia ilicifolia*) are not known there. There is a long gap-- some 300 km -- to the North Otago coastal hills and Otago Peninsula, the only landforms southwards on the east coast that are comparable to Banks Peninsula.

Banks Peninsula thus provides interesting botanical combinations. Obviously, by definition, nowhere else can one find any of the Peninsula's endemic species growing naturally. But nowhere else, either, does one find *Olearia fragrantissima* growing with kawakawa, tītoki, nīkau or akeake. Narrow-leaved snow tussock (*Chionochloa rigida*) 'shakes hands' with kawakawa (*Macropiper excelsum*) at 400 m in the Peraki Valley, and at Hinewai it grows within a few minutes bicycle-ride of nīkau palm. Not unique, but intriguing, is where low altitude red and black beech have kawakawa, pigeonwood, ngaio and native passion vine in their understorey.

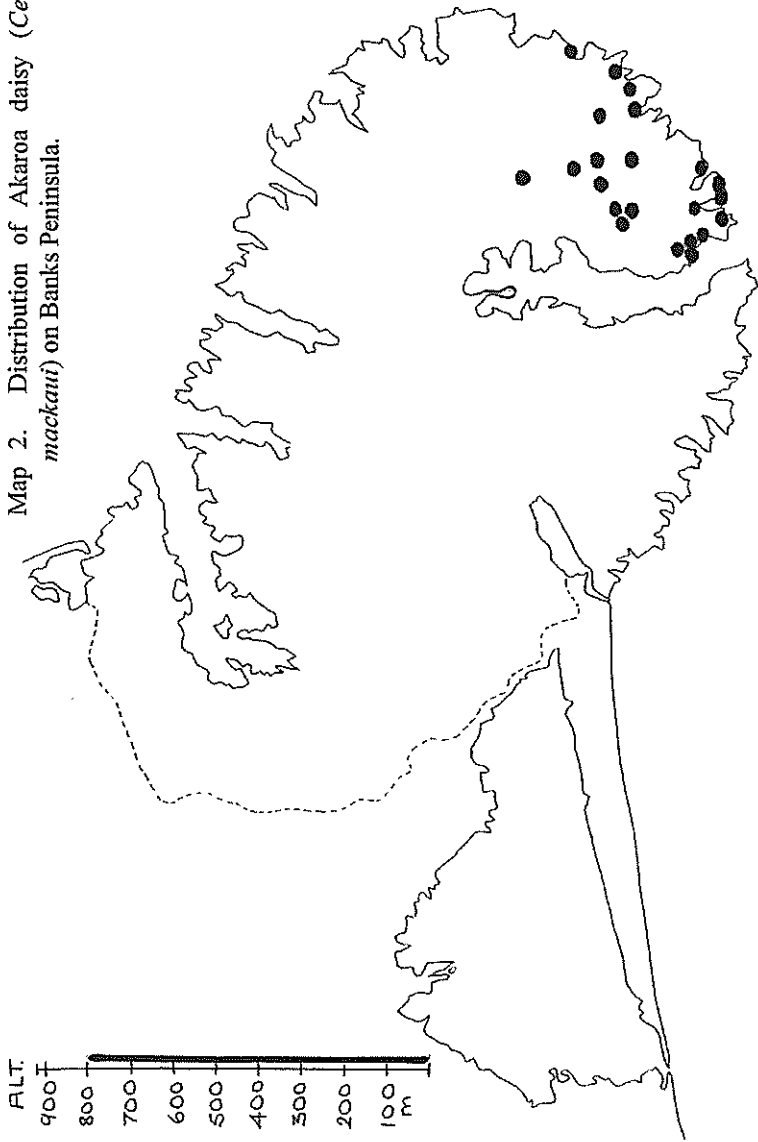
REFERENCES

- Connor, H. E. 1991: *Chionochloa* Zotov (Gramineae) in New Zealand. *New Zealand Journal of Botany* 29: 219-282.
- Dawson, J. W. 1967: The New Zealand species of *Gingidium* (Umbelliferae). *New Zealand Journal of Botany* 5: 84-116.
- Wilson, Hugh D. 1993: Bioclimatic zones and Banks Peninsula. *Canterbury Botanical Society Journal* 27: 22-29.
- Wilson, Hugh D. 2001: Rare plants and Banks Peninsula. *Canterbury Botanical Society Journal* 35: 21-31.

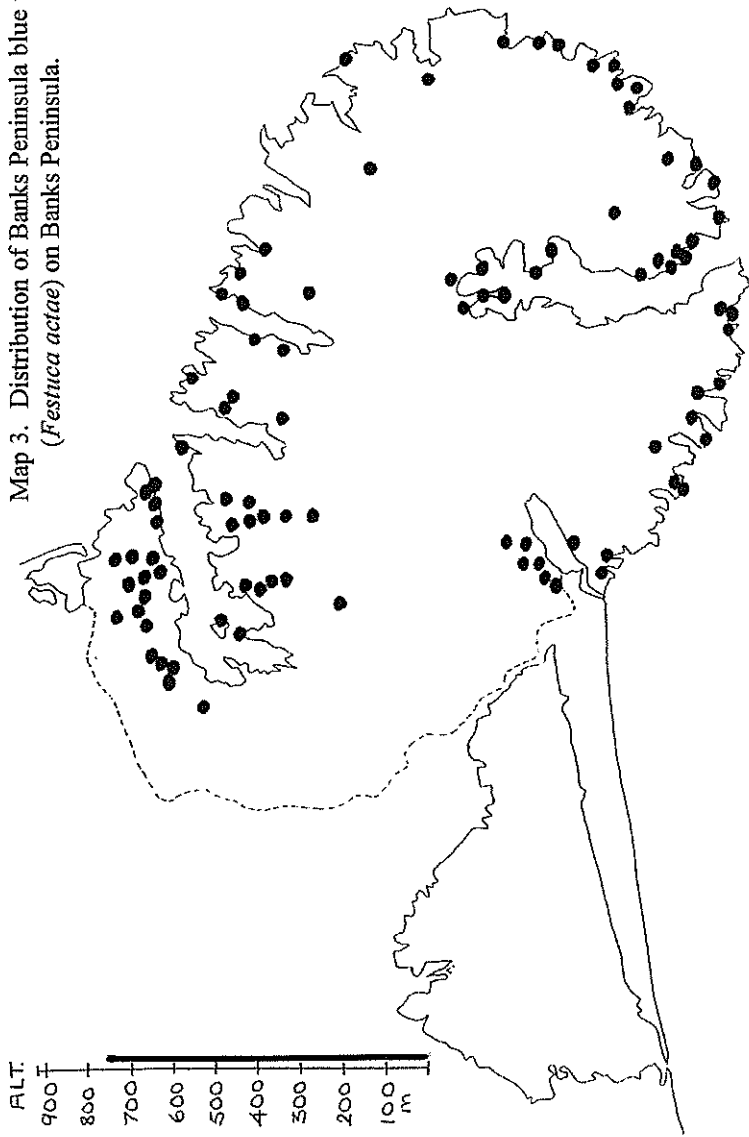
LIST 1. BANKS PENINSULA ENDEMICIS

- Celmisia mackau* – Akaroa daisy. Apart from one dubious early record from Mount Herbert, this magnificent daisy is known in the wild only east of Akaroa Harbour, within an area no greater than 10 km × 10 km, which is a remarkably restricted native range (Map 2). It occurs on cliffs and banks out of reach of grazing animals from sea level up to 800 m. Its closest relative is probably *Celmisia hookeri* of northeast Otago.
- Festuca actae* – Banks Peninsula blue tussock. This small, fine-leaved, glaucous tussock is widespread on Banks Peninsula on steep rocky banks and cliffs, especially near the sea but also up to 750 m on inland rock outcrops and bluffs (Map 3). Its closest relative is probably *Festuca multinodis* which is native from North Canterbury northwards to the Kaimanawa Mountains in the North Island.
- Gingidia enysii* var. *peninsulare* – Banks Peninsula rock anise. In 1967 John Dawson regarded the Banks Peninsula population of this species as distinct and named it var. *peninsulare*. Subsequently, botanists questioned whether it is distinct enough to deserve a varietal name, but recent work (Peter de Lange pers. comm.) appears to support recognition at some subspecific rank. On Banks Peninsula the species is locally common, but easily overlooked, on a few rock outcrops, from about 390 m to about 780 m (Map 4). Hybrids with *Gingidia montana* have been found. Outside Banks Peninsula, other varieties of the species occur at restricted sites, often on limestone, in Canterbury and Otago.
- Hebe strictissima* – Banks Peninsula hebe. This bushy shrub is widespread across the Peninsula from the coast to the tops on steep banks and bluffs, and in shrubland and scrub, wherever it is out of reach of grazing animals. It is closely related to *Hebe traversii*, found in other parts of Canterbury, Marlborough, and Nelson.

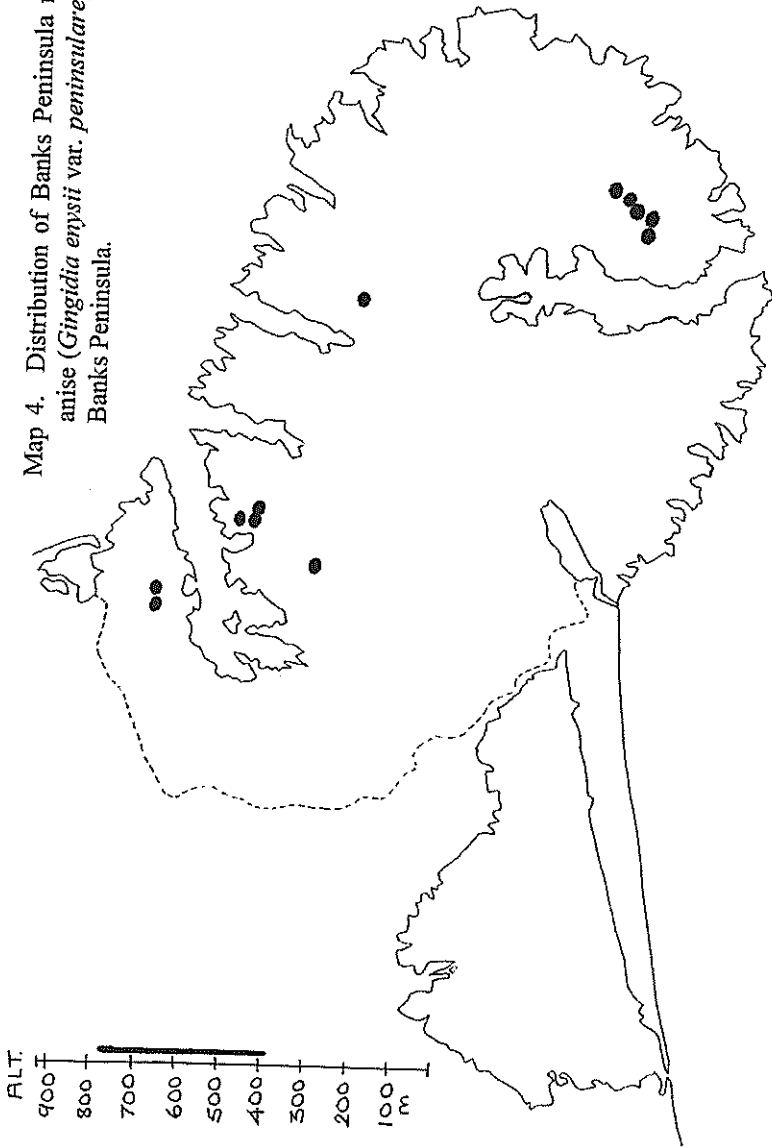
Map 2. Distribution of Akaroa daisy (*Celmisia mackayi*) on Banks Peninsula.



Map 3. Distribution of Banks Peninsula blue tussock
(*Festuca actae*) on Banks Peninsula.



Map 4. Distribution of Banks Peninsula rock
anise (*Gingidia erysii* var. *peninsulare*) on
Banks Peninsula.



Heliohebe lavaudiana – Banks Peninsula sun hebe. This low subshrub is widespread across the Peninsula in rocky places. In October, pink flower buds beautifully complement already-opened white flowers. Its closest relative must be *Heliohebe raoulii* of Mid- and North Canterbury.

Leptinella minor – Banks Peninsula button daisy. A ground-hugging, patch-forming herb, common in open short turf around the dry outer perimeter of the Peninsula, this little plant is easily overlooked, until the patches become starred-over with small, white, button-shaped, short-stalked flower heads. It is closely related to *Leptinella filiformis*, known from North Canterbury and Marlborough but now extremely rare.

Myosotis “*australis* var. *lytteltonensis*” – Banks Peninsula forget-me-not. Most people regard this as a distinct species, and not as a variety of *M. australis*, but the botanical name given is the only published one available. It is, alas, now very rare. The one known substantial population is in a rocky gully on Mount Evans, above Purau, now threatened by goats. It is not certainly a Banks Peninsula endemic because similar, if not identical plants have been collected from Marlborough and Wellington. A close relative might be *Myosotis goyenii* of dry rocky sites in Canterbury and Otago.

Tmesipteris “Banks Peninsula big spore”. Three sorts of *Tmesipteris* appear to live on Banks Peninsula. Two are well-known species, one of which (*T. tannensis*) is a New Zealand endemic, and the other (*T. elongata*) shared with Australia. The third is more or less intermediate in appearance, and is so far known only from Banks Peninsula. Microscopic examination reveals that it has relatively large spores and double the chromosome number of the other two. If it is a distinct species, it may have arisen as a polyploid stable hybrid. It seems extraordinary, in such an ancient lineage, that this might have happened only on Banks Peninsula. Greater minds than mine are working on it.

Wahlenbergia akaroa – Akaroa harebell. An attractive herbaceous plant with firm fleshy leaves and large blue or white flowers, was named as a distinct species by Judith Petterson in 1997. I am inclined to take a much broader view of the taprooted native harebells, preferring to call the very variable populations on Banks Peninsula *Wahlenbergia gracilis*, and to regard *W. akaroa* as just a fleshy-leaved, large-flowered coastal form. Plenty of intermediate forms seem to link *W. akaroa* with the abundant harebells of grassland, shrubland and banks; flower size and colour vary continuously. Even if *W. akaroa* is accepted as distinct, it is dubiously endemic to

the Peninsula because plants that seem the same occur at other coastal localities, such as the Cook Strait area.

LIST 2. SPECIES WITH THEIR SOUTHERN LIMIT ON BANKS PENINSULA

(a) Species not known to extend any further south on either coast of the South Island nor on the Chatham Islands

- Adiantum fulvum* – not found for many years on Banks Peninsula and may be extinct here.
- Alectryon excelsus* – tītoki (common, somewhat local).
- Anarthropteris lanceolata* – lance fern (rare, local).
- Arthropodium cirratum* – renga lily. There are specimens collected in the late 1860s in the Armstrong Herbarium, apparently from Lake Forsyth. Natural populations are now known from no further south than about 42° 30' S, a little south of Kaikoura. Renga lily is widely cultivated on Banks Peninsula, and sometimes persists as a garden discard down roadside banks, although I do not yet know of anywhere where it has gone really wild.
- Arthropteris tenella* – jointed fern. Earlier reports remain unconfirmed. The known southern limit is in the Marlborough Sounds at about 41° 20' S.
- Asplenium appendiculatum* subsp. *maritimum* (quite common but local).
A. appendiculatum subsp. *appendiculatum* extends much further south to Stewart Island and the Antipodes Islands.
- Asplenium oblongifolium* – shining spleenwort (common).
- Cheilanthes distans* – woolly rock fern (common, rather local).
- Dodonaea viscosa* – akeake (common, rather local).
- Dracophyllum acerosum* – inaka (quite common, somewhat local).
- Elymus multiflorus* – wheatgrass (rare, local).
- Euchiton gymnocephalus* – creeping cudweed (common).
- Grammitis ciliata* – finger fern (rare, local).
- Leucopogon fasciculatus* – mikimiki (uncommon, local).
- Macropiper excelsum* – kawakawa (abundant).
- Muehlenbeckia astonii* – shrubby tororaro (rare, local).
- Passiflora tetrandra* – native passion vine, kōhia (common, rather local).
- Pteris pendula* (rare, local). Possibly introduced to Banks Peninsula from further north.
- Pteris tremula* – turawera (uncommon, local).
- Pterostylis alobula* (rare, local). Native status on Banks Peninsula is uncertain. It is possibly introduced here from further north.

Schoenoplectus tabernaemontani – lake clubrush, kuta (uncommon, local).

Solanum aviculare – northern poroporo (common, rather local).

Spinifex sericeus – appears to be extinct on Banks Peninsula. An early record, if valid, extends its original range southwards to Dunedin.

LIST 2. continued

(b). Species not known to extend any further south on the east coast of the South Island, but known to extend a little further south on the west coast, or on the Chatham Islands

Cyperus ustulatus – umbrella sedge (uncommon, local). Extends southwards on west coast to Fiordland.

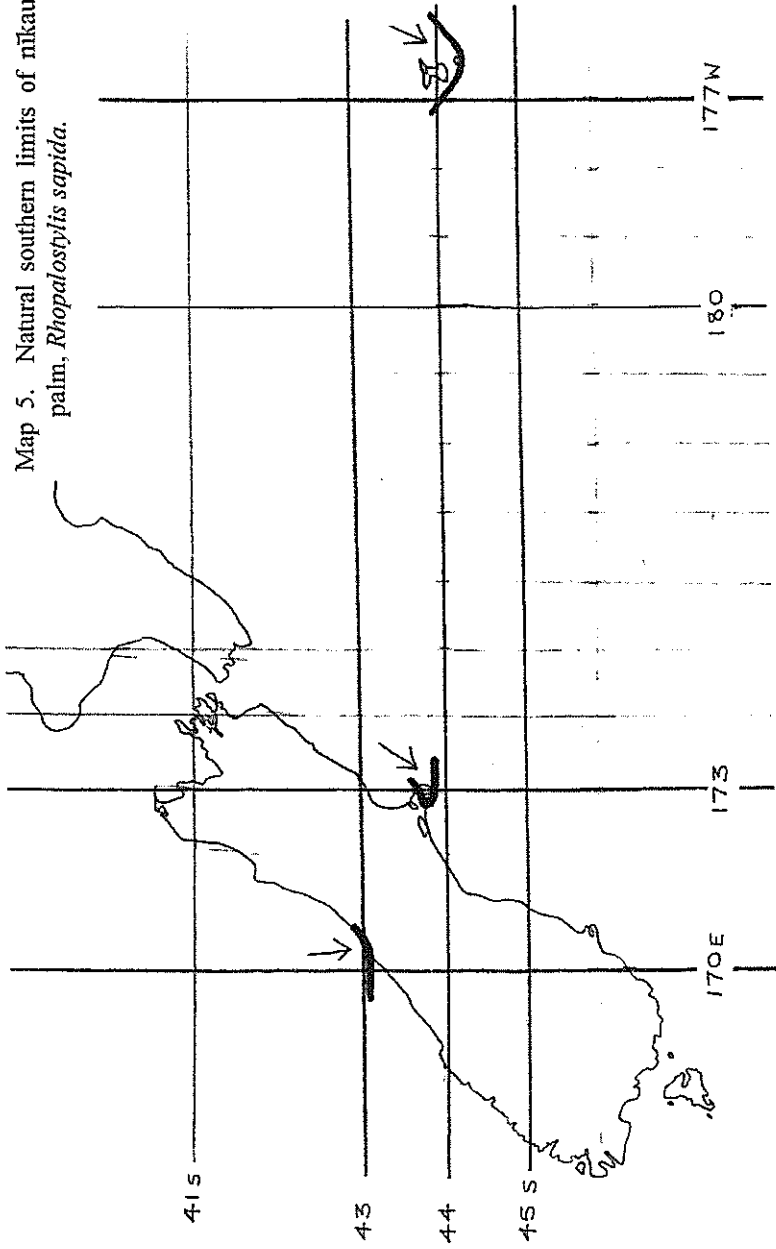
Griselinia lucida – shining broadleaf (uncommon, local). Extends southwards on west coast to Fiordland.

Hedycarya arborea – pigeonwood (common). Extends southwards on west coast to Fiordland.

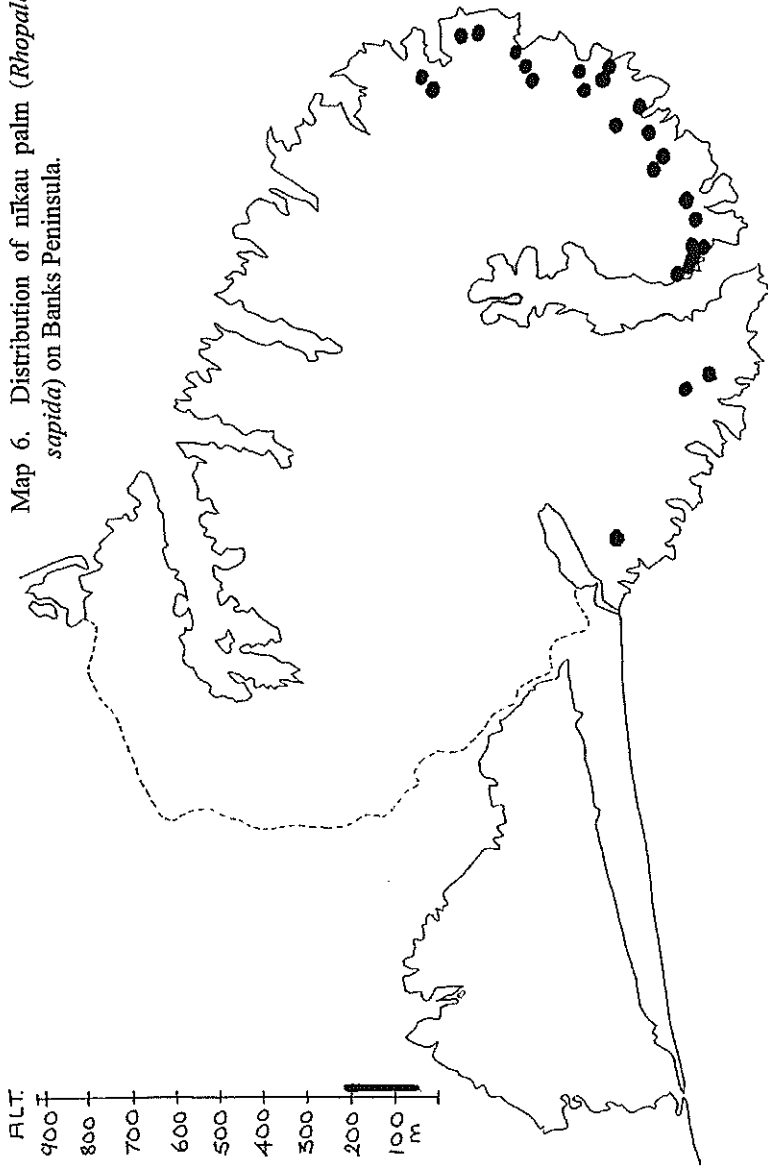
Microsorium scandens – fragrant fern (rare and local). Extends a little further south on the Chatham Islands. The continued existence of this fern on Banks Peninsula was recently confirmed by Miles Giller, who found it near Hinewai, up-valley from Stony Bay.

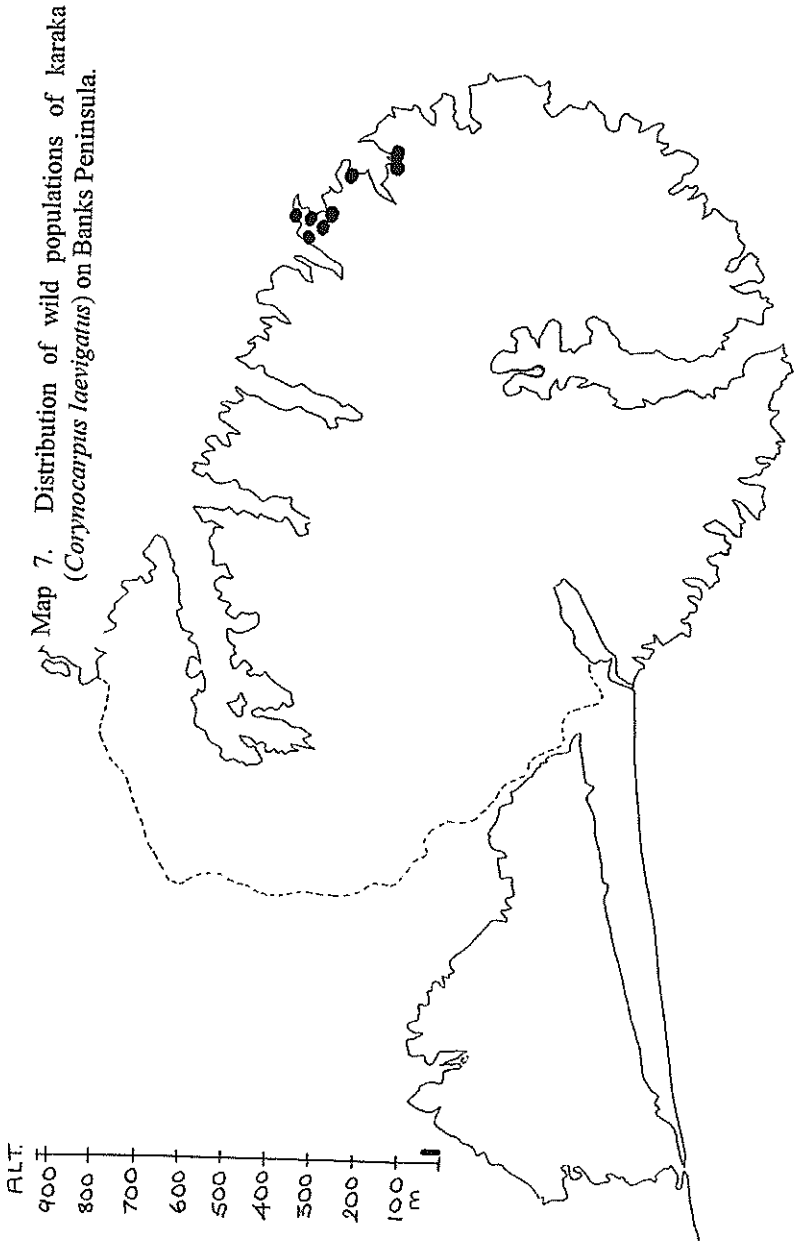
Rhopalostylis sapida – nīkau palm (uncommon, local). Three nīkau palms in the lower Island Bay Valley, west of Timutimu Head, Akaroa Harbour are, at 43° 50' 30" S, the southernmost known naturally occurring palms on the main islands of New Zealand, being about half a kilometre south of the fine stands in Nīkau Palm Gully on the east side of Akaroa Harbour. Surprisingly the mild west coast of the South Island cannot boast of more southern palms; the southernmost nīkau I know of there are close to the Wanganui River mouth, just a minute or two south of 43° degrees. But Banks Peninsula is pipped at the post by the Chatham Islands (Map 5), which are blessed with nīkau palm on Pitt Island, at 44° 16'. These are the southernmost naturally occurring palms in the world. The pattern of nīkau distribution on Banks Peninsula (Map 6) suggests strongly to me that here nīkau is native, and that karaka (*Corynocarpus laevigatus*) is not (Map 7).

Map 5. Natural southern limits of nīkau palm, *Rhopalostylis sapida*.



Map 6. Distribution of nīkau palm (*Rhopalostylis sapida*) on Banks Peninsula.

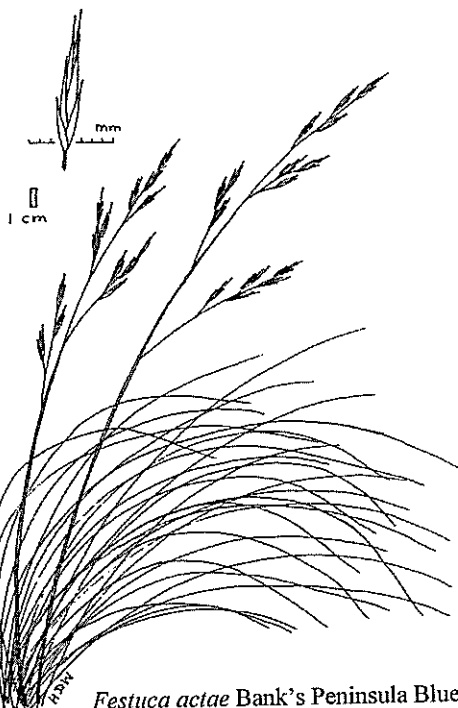




LIST 3. SPECIES WITH THEIR NORTHERN LIMIT ON BANKS

PENINSULA

- Chionochloa rigida* – narrow-leaved snow tussock or wī kura (common, rather local). The northern limit of this species lies across Banks Peninsula in the east, but extends a bit further northwards off to the west (Map 8).
- Olearia fragrantissima* – fragrant tree daisy (uncommon, local). Banks Peninsula forms a clear-cut northern limit for this species.
- Poa astonii* – blue shore tussock (rare, local). There are earlier records from further north but they are dubious. Banks Peninsula probably is the clear-cut northern limit for this species.
- Rytidosperma corinum* – eastern bristle tussock (common, rather local). The northern limit of this grass lies across Banks Peninsula in the east, but extends a bit further northwards on the Canterbury Ranges to the west.
- [*Carex trifida* – trifold sedge (rare, local). Known north of Banks Peninsula only from Stephens Island in Cook Strait].

*Festuca actae* Bank's Peninsula Blue Tussock

Map 8. Generalised distribution of *Chionochoila rigida*
(after Connor 1991).

