

## HIGHLIGHTS IN A BOTANICAL STUDY OF BANKS PENINSULA

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Familiar spurs descending from the Port Hills skyline into Christchurch form the near edge of Banks Peninsula for most Canterbury people. Its far edge, with immense cliffs falling abruptly into a sometimes wild-looking Pacific Ocean, seems more remote, an isolation emphasized by the seals, penguins, shags, and petrels, but lessened in season by the lights of squid boats spangling the night horizons. Even these dramatic eastern coastlines, though, are no more than a day's bike-ride from the square. One might imagine that a local Christchurch botanist would know a lot about the plants that grow there. Some do.

I was born and raised in Canterbury; since I was six the peninsula has been like an extension of my back garden. I thought I had a fair understanding of the place, until I set to work to study the plant life in detail. For the past two summers I have been tramping across those nearby landscapes recording in a systematic way as much about the vegetation cover as I can. It has been like discovering a new land. It also leaves me wondering whether to laugh or cry! On one hand it is a delight to find how much of a rich and diverse flora still remains, given the century of drastic modification that has occurred. On the other hand the rate and nature of continuing change can be extremely depressing. Much of the remnant bush is battered by stock; goats are now widespread, and becoming feral; harvesting of kanuka for firewood sales and extension of improved pasture is currently fairly vigorous; and there are many horrifying examples of spray-damage to the bushed gullies which are so important for landscape, and botanical and wildlife values.

Forest-clad for most of its several million year history, an island till a few thousand years ago, the peninsula must have lacked substantial open ground for much of its past, until fires in polynesian times removed the trees from drier spurs and slopes. Tussock spread to these areas from the few steep, exposed places where they had retained a foothold against the trees; silver tussock at lower altitudes, fescue and snow tussocks on higher, colder sites. Still, the landscape was largely forested when europeans began to settle in the mid 19th century. They wasted little time in stripping the bush from the land, first by milling from bay heads and valley floors, and increasingly by accidental and

intentional fires. Widespread sowing of exotic grasses established pasture on the ashes. By 1900 the transformation was complete. Now, although some people find it hard to picture Banks Peninsula as a forested landscape, the abundant charred and bleached stumps, boles, and logs attest that it was indeed forested quite recently, not all that much more than one human lifetime ago. Change continues. While nearly everywhere the woody vegetation silently and steadily wages a ceaseless campaign to reoccupy the ground, led by kanuka and *Comprosmia* (the native stormtroopers) and gorse (European foreign aid), farmers fight back with spray bulldozer, fire, ryegrass, and clover. For a botanical observer, the feeling this engenders are very mixed.

To observe the drama of such a biological battlefield is itself a fascinating occupation, very different from observing the relatively stable patterns and slow-wheeling skirmishes in the near-primitive vegetation cover of Stewart Island where my last major study took place. Chance seems more to the fore in determining the present distribution and survival of individual plant species on the drastically modified Peninsula landscapes. Nevertheless enough survives to allow us to reconstruct a picture of the old plant cover, and to understand some of the forces which shaped, for example, the patterns of matai, kahikatea, totara, and beech forest.

I estimate the total native vascular flora of Banks Peninsula at about 500 species. (I haven't added up the naturalised flora yet but it is unlikely to be much less; as the survey also embraces cryptogams, it involves taxonomic diversity certainly in excess of 1500 entities - mind-boggling and wonderful!).

There are a few species recorded in the past which I have been unable to find so far. This may mean local extinction, but it is amazing how many hiding places those rudely uncovered hills and valleys provide even for trees let alone for tiny herbs. After two years, discoveries new for me continue at a stimulating rate, and other people keep coming to me with news and specimens of novel finds. For example, John Lovis let me in on the staggering rediscovery of *Hymenophyllum dilatatum* on the southern Port Hills. John and Phyllis Thompson have shared numerous findings from their sharp-eyed plant hunting, especially rare orchids and tiny herbs. June Hay of Pigeon Bay drew Margaret Bulfin's attention to 'the rocks where the gentians grow', resulting in the identification by Colin Webb of *Gentiana serotina* as a newly recognised element of the Peninsula flora. (see Margaret Bulfin's article on p.20). Bill Sykes recently brought to me a tiny *Euphrasia* from Mt Herbert, corroborating a previous collection of *E. zelandica* from the area.

Now, here is your chance to be mentioned in dispatches. (Any Botanical Society

member who provides information leading to the confirmation of the following species on Banks Peninsula will get a hug and/or an icecream; are the following species really locally extinct or are they still lurking somewhere.)

Pittosporum obcordatum: I am hoping that one day soon someone will walk into a bush of this species. It was collected at Akaroa by Raoul in 1840; never again seen on Banks Peninsula, it is known elsewhere only from three small colonies and from collected plants. Hymenophyllum malingii: this filmy fern appears to be restricted to the trunks and branches of native cedar, a tree species which has suffered almost total mortality on the Peninsula in the last few decades. Although one live cedar is known, and although saplings of several ages grow in a few localities, there has been no sign of the filmy fern for many decades. Hypolepis distans and Arthropteris tenella: neither confirmed this century. Lepidium oleraceum: Cook's scurvy grass; see Phil Garnock-Jones article page 61. Ischnocarpus novae-zelandiae: Arnold Wall collected this small native crucifer on Mount Pleasant around 1926. Metrosideros perforata: One climbing rata, M. diffusa, is common and rather variable on the Peninsula. M. perforata is said to have been present last century when J.F. Armstrong wrote about plants in the vicinity of Christchurch, but it has not certainly been confirmed since. Euphorbia glauca: definitely present decades ago; not seen recently. Sebaea ovata: not seen for many decades. Taraxacum magellanicum: Arnold Wall recorded it from Mount Herbert where it may still be hiding. Euphrasia cuneata: not confirmed this century. Parahebe canescens: known from Lake Forsyth, but not seen recently. Hebe elliptica: surely this species persists here somewhere? Hebe raoulii var raoulii: the question of its occurrence here is a tricky one, worthy of a short article later. Arthropodium cirratum: collected in the 19th century near Lake Forsyth, its rediscovery on Banks Peninsula would be exciting.

Several Botanical Society members on a recent foray down the Wainui side of Saddle Hill shared the thrill of rediscovering umbrella fern (Sticherus cunninghamii); not just a few fronds either, but a luxuriant, healthy patch covering many square metres. Our president, Philippa Horn, was with me when we found Olearia odorata near Menzies Bay.

Recent such species-highlights have included Sphagnum falciculatum (near Wainui), Crepidopteris endlicheriana (Peraki Saddle reserve), Dicksonia fibrosa (under Mt Fitzgerald), Hypolepis lactea (eastern Banks Peninsula), Asplenium trichomanes, Ranunculus macropus (near Wainui), Muehlenbeckia axillaris (Saddle Hill), Epilobium macropus (Mt Herbert), Hoheria populnea var lanceolata, Stackhousia minima, Gaultheria crassa (Mt Herbert), Pentachondra pumila, Myrsine nummularia, Coprosma acerosa, Hypsela rivalis, Parahebe lyallii (Mt Herbert), Geum parvifolium,

(Mt Herbert), Hebe odora agg. (Mt Herbert), Pterostylis alobula (Akaroa), Poa astonii (near Akaroa Heads).

Here's one more thing to look for. I could never understand why Elaeocarpus dentatus (hinau) should be present in Riccarton Bush, but absent from the Peninsula (its relative E. hookerianus (pokaka) is found here and there). John Thompson, in Journal 18, records that H. Gilpin informed him that he had seen a specimen of hinau in the main bush gully of the Sugarloaf reserve. This needs confirming, but Huia Gilpin's comments are not to be taken lightly. He directed Joe Cartman to a thriving colony of Clematis marata on Mansons Point, still the only known Banks Peninsula population, although the Peninsula is the type locality for this species. Joe in turn delighted me by leading me to the site, and provided me with male and female plants propagated from cuttings, which are busy climbing up my fence at home).

Another particular surprise was to be shown an old tree of Pseudopanax edgerleyi on John Stewart's property above Le Bons Bay. Unless I find more of this species I will withhold any conviction that it is native here, but the single tree gives little hint of being planted, and its presence is certainly intriguing. Margaret Bulfin is currently testing germination of seeds collected from the tree in March.

Highlights of a survey like this are not just to do with the presence or absence of particular species; indeed the rarity of some is simply an embarrassing reminder that our treatment of the land has pushed them to the brink. Especially in a battered, modified landscape like Banks Peninsula, it is a delight to enter bits of vegetation in good nick. In recent weeks I have explored Nikau Palm Gully, Dan Rogers Gully, and some of the cliffs between Akaroa Heads and Goughs Bay Enclosed in the green shadows of tropical-looking nikau and tree-fern groves, squirming through thick scrub between the Dan Rogers Falls and a wild-running sea, perching precariously on the edge of living wall-hangings of flowering Celmisia mackaui; this botanist's heart takes wing just as in other wilder places further afield