

<i>Carex flagellifera</i>	c	
<i>Cordyline australis</i>	s	
<i>Cortaderia fulvida</i>	o-lc	AKU 22725
<i>Cyperus ustulatus</i>	lc	AK 129239
<i>Gahnia lacera</i>	o	
<i>Isolepis cernua</i>	c	AK 129459
<i>I. nodosa</i>	c	AK 129236
<i>Leptocarpus similis</i>	lc	AK 129237
<i>Phormium tenax</i>	c	
<i>Poa anceps</i>	lc	
<i>Stipa stipoides</i>	lc	AK 129234
<i>Uncinia uncinata</i>	s	
<i>Zostera muelleri</i>	lc on tidal mud flats	AK 182105

The herbarium voucher specimens were collected by P. Hynes (1963), F.M. Warren (1970), J.H. Goulding (1971), A.E. Wright (1976 & 1981), R.O. Gardner (1983) and E.K. Cameron (1991).

## References

- Bowie, E. 1983: Ihumatao. *Auckland Botanical Society Newsletter* 38(1): 14.  
 Cameron, E.K. 1991: Mangere: a small forest remnant and *Sicyos australis*. *Auckland Botanical Society Journal* 46(2): 83-84.  
 Hayward, J.J. & Hayward, B.W. 1996: Fossil forests preserved in volcanic ash and lava at Ihumatao and Takapuna, Auckland. *Tane* 35: 127-142.  
 Wilcox, M. 1997: Ihumatao fossil forests, Manukau Harbour. *Auckland Botanical Society Journal* 51(2): 11.

## Duders Regional Park (South Auckland) ABS Field Trip 21 September 1996

Sandra Jones

A perfect Spring day. Three or four days of sunshine had been enough to dry out the quagmire underfoot that was a legacy of Auckland's wettest(?) August on record and wettest winter since ....., well, since before my time, anyway.

The most recent addition to the Auckland Regional Parks network is a farm park just south of Maraetai, across the Tamaki Strait from Waiheke Island. The park sits astride a headland jutting out into the Hauraki Gulf, with spectacular views from its high points. It consists of steep rolling green pasture with a couple of patches of remnant bush, a wetland and a salt marsh. Still nameless at the time, three options were being considered: **Duder's**, after the long-established family who sold the land to the ARC, and who still farm next door; **Whakakaiwhara**, after Whakakaiwhara Point at the end of the headland; and **Umupuia**, after the nearby marae and beach (which is also known locally as "Duder's Beach". Anne the wag proposed a compromise: **Whaka-Duder-Puia**, which you have to admit does have a certain ring about it.

We followed a farm road around the southern side of the peninsula, at one point stepping down off the built-up road (constructed by the Air Force in 1942) into the wetland which grades into salt marsh (or 'mud flats', as it is described on the map). The salt marsh is fenced off from farm stock (and from us) but we identified, from a distance, *Stipa stipoides*, *Juncus maritimus* (sea rush), *Isolepis nodosa* (knobby clubsedge), and *Plagianthus divaricatus* (saltmarsh ribbonwood). Some shrubs of the latter species on "our" side of the fence were in flower, though it took someone with a 10x hand lens to point this out. We were so distracted by this that we didn't think to check the flowers for their reputed fragrance. I think that they were only partially open anyway. *Leptocarpus similis* (jointed wire rush or oiioi) was also flowering. The stem isn't 'jointed' at all. The leaves are reduced to dark sheaths, which, because they are small and cling to the stem some distance apart, give the

impression of 'joints'. Discussion centred around the colour of the exerted styles on the female plants. Were they red, cerise-y red, maroon, magenta or garnet (specifically, the colour of the most recent garnet to become available on the commercial market, according to Auntie Anne, our in-house gemologist)? The predominant feature in the browsed wetland was pasture grass of some sort, but we found a number of species of rushes and sedges to interest us, including *Juncus gregiflorus*, *J. effusus* (adventive), the endemic *Cyperus ustulatus* (giant umbrella sedge), *Baumea juncea* with sickle-shaped tips on its sheathing bracts, and dense bright green tussocks of *Carex virgata* standing out from their duller neighbours. The latter are distinguished by their 3-angled stems which feel like coarse sandpaper. Growing in profusion in some sections of the drains were masses of yellow-flowered bachelor's buttons (*Cotula coronopifolia*) of the daisy family. Fresh water in the higher reaches of the drains supported patches of *Polygonum salicifolium* (swamp willow weed), the tiny floating duckweed (*Lemna minor*), and just to please Ewen, *Azolla rubra*, a native water fern which appears to be decreasing from the Auckland region. It differs from the introduced species in that it doesn't have "hairy" roots (or "roots covered with hair-like rootlets" if you want to be pedantic about it).

Alistair side-tracked us a short distance to inspect a puriri (*Vitex lucens*) tree trunk peppered with holes made by puriri moth caterpillars (*Aenetus virescens*). There appeared to be more holes than substance. The tree wasn't looking too well. Despite its common name, the caterpillars feed on the living bark of a variety of trees, not just the puriri. *Carpodetus serratus* is another obvious example. Its common name (putaputaweta) suggests that the holes are made by weta, but they merely inhabit the holes after the puriri moth caterpillars have finished with them. In fact, if the caterpillar is in residence it's unlikely that the hole would be noticed because the tunnel entrance and surrounding feeding bark are concealed by a web of silk. The 'burrows' can be up to a foot long, which isn't really surprising when you consider that the caterpillar stage can last up to 5 years.

The farm road we were following then left the wetland behind and continued around the coastal fringe through regenerating bush. The heady perfume of *Geniostoma rupestre* (hangehange) and *Leucopogon fasciculatus* (mingimingi) flowers made up for their insignificant appearance. Other species in flower to mark our progress were *Clematis paniculata* (both male and female flowers on their separate vines), *Brachyglottis repanda* (rangiora), *Rubus cissoides* (bush lawyer), *Macropiper excelsum* (kawakawa), *Sophora microphylla* (kowhai), and *Hebe macrocarpa*. *Hebe stricta* was also found here, but it has a different flowering time. *Diplazium australe* and *Deparia petersenii*, those inseparable ferns, and *Lastreopsis microsora* were poked, prodded and named. It came as no surprise to find *Coprosma macrocarpa* in this coastal bush.

We stopped at a small quarry, opened in the early 1950s to provide metal for use on the farm, to look for orchids on the disturbed cliff face. Auntie Anne, who is an orchidologist as well as gemologist, spotted the sun orchid *Thelymitra longifolia*, a *Caladenia* species, and the onion orchid *Microtis ?unifolia*, none of which were yet in flower. Those prepared to scramble up the unstable base of the quarry face (among them Ewen: "I wonder how strong this is? Whoooooops!") found both *Gaultheria antipoda* (bush snowberry) and *Drosera auriculata* (sundew) in flower. Those of us with any sense at all stayed on solid ground but had to make do with a couple of small non-flowering specimens of *Gaultheria*.

Out on the beach, we stuck close to the vegetated bank, looking, mostly in vain, for native species which manage to survive the smothering grass. We did find *Lobelia anceps*, *Carex lesssoniana*, *Calystegia sepium*, *Isolepis cernua*, *Pomaderris phyllicifolia* and one of the three native *Bolboschoenus* sp. with its large root tubers exposed in the unstable bank. Some of us thought we'd found watercress (*Rorippa*) (which is not native, of course) in a seepage. Right habitat, wrong species. It was an introduced water celery (*Apium nodiflorum*), aptly named "fool's watercress". So we weren't the only fools. Johnson & Brooke (1989: 230) report that it has "appeared on Auckland markets in this guise". On the rocks at Malua Bay, where we stopped for lunch, were a few plants of *Sarcocornia quinqueflora* (glasswort) and the sand bindweed *Calystegia soldanella*. "Bailey's hammock", two tall Lombardy poplars on the edge of the beach which were "planted" in the 1910's to support a hammock, was pointed

out to us by one of our leaders who was armed with the draft management plan in several volumes.

As we turned to head inland along the bank of a stream, Ewen decided to take a closer look at the attractive "hinau" that was growing on a slope above the beach. It was fortunate that he did, because it was, in fact, tawaroa (*Beilschmiedia tawaroa*). With its erect leaves, which are dark green and are larger and broader than those of its very close relative *B. tawa*, it looked more like hinau from a distance. Two other tawaroa were found close by. A gentle stroll uphill, past the two geese sitting on their nests in the raupo (*Typha orientalis*), brought us to a small, fenced, bush remnant. The canopy was pure tawa/taraire (*B. tarairi*). A couple of juvenile *Litsea calicaris* (mangeao), *Dysoxylum spectabile* (kohekohe), and *Carpodetus serratus* (putaputaweta) were spotted. The ferns *Arthropteris tenella* and *Lastreopsis glabella* were found. A feature of this patch of bush and the next one was the number of puriri juveniles. When was the last time you saw a puriri between 1m and 3 m high? We saw lots.

When we emerged on the uphill side of the bush, the main party took a side trip out to the point to see the view and superb pa. They reported little of botanical interest or additions to the species list except *Pittosporum eugenioides* (lemonwood) in flower and *Astelia banksii*. The second bush remnant we visited, over the high point of the main ridge from the first, although also predominantly tawa / taraire, was more diverse. There were small pure stands of kanuka (*Kunzea ericoides*) and occasional trees of miro (*Prumnopitys ferruginea*), matai (*Prumnopitys taxifolia*), rimu (*Dacrydium cupressinum*), kahikatea (*Dacrycarpus dacrydioides*) and puriri. *Hypolepis ambigua*, the NZ jasmine (*Parsonsia* sp.), supplejack (*Ripogonum scandens*), and pigeonwood (*Hedycarya arborea*) were added to the species list. Swards of *Oplismenus imbecillis* and *Microlaena stipoides* formed ground cover in different patches of the bush. It was here that the second quote of the day was diligently recorded. Anne and Sandra had stopped to check the species list. Wendy snatched the opportunity to have a quick cup of tea, but finding that they had completed their task and were making ready to move on before she was ready, asked querulously "Haven't you two got another list to go through?"

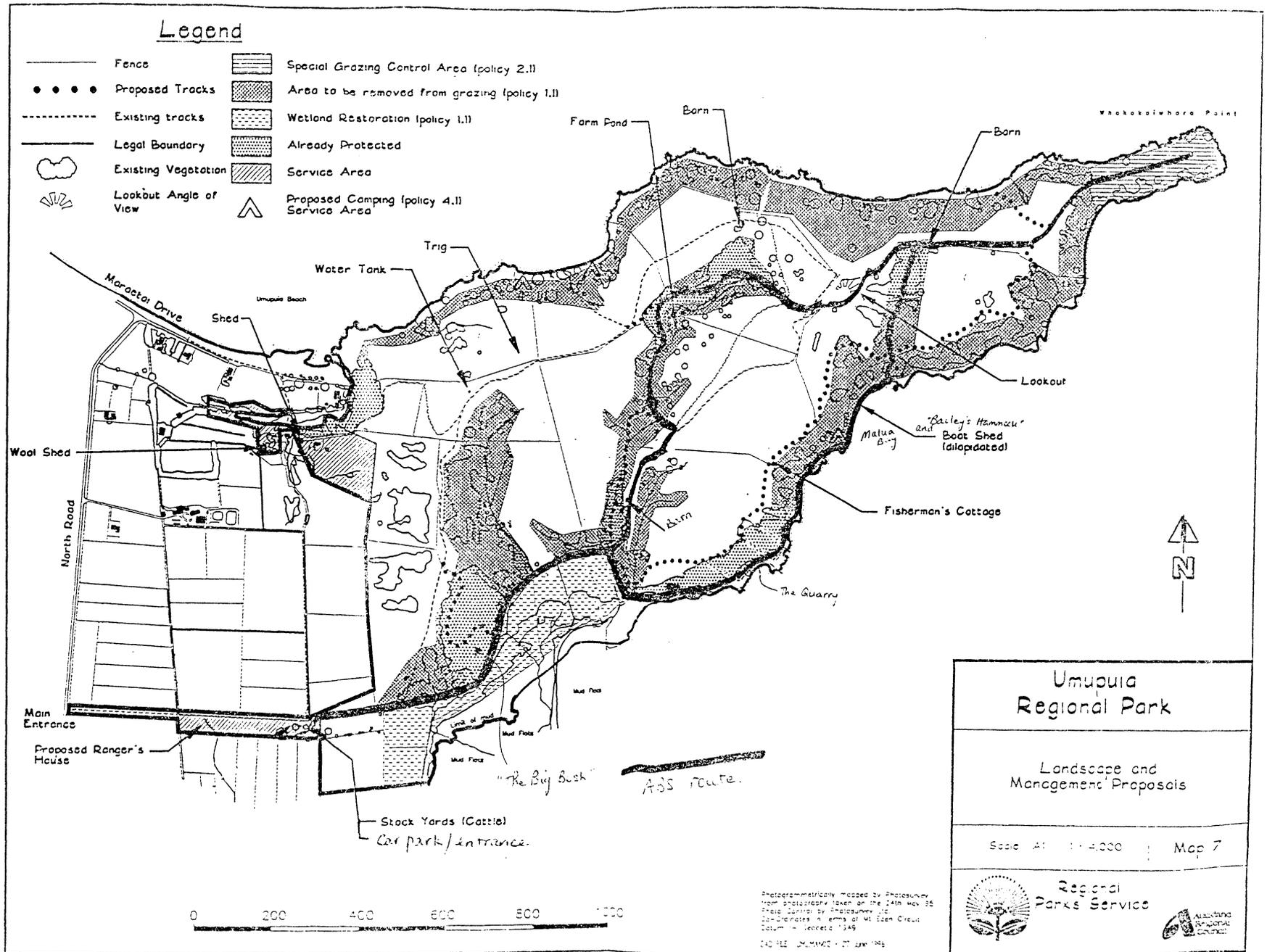
The farm pond on the bottom edge of the bush was just the kind of place you imagine you'd like to bring a picnic on a summer's day. Tussocks of *Carex virgata*, perched on their "trunks", grew in the shallow water of the pond margins, green algae floated in patches on the surface, and rushes and sedges grew round the edges, with the bush growing right down to the pond on one side. At the outlet, we saw the one and only wheki (*Dicksonia squarrosa*) recorded on the day, and nearby a patch of *Blechnum minus* (swamp kiokio). From here we left the bush behind and climbed back up the slope to the farm road and followed it down to the wetland from whence we started. Dotted about the landscape were individual trees left standing in splendid isolation when the bush was cleared for farmland, including kauri (*Agathis australis*), matai (*Prumnopitys taxifolia*), totara (*Podocarpus totara*), and kahikatea.

Thanks to our leaders, Anne Grace and Steve Benham, and to the field trippers who are always such a cheerful and convivial group to be with. As the volunteer scribe for the day, I am particularly grateful to those who kept my wandering mind focussed on the job!

## References

- Auckland Regional Council Parks Service. 1996: Umupuia Regional Park. Background Information. ARC Regional Parks Service.
- Auckland Regional Council Parks Service. 1996: Umupuia Regional Park. Draft Management Plan. ARC Regional Parks Service.
- Grehan, J.R. and Winstanley, W.J. 1980: The puriri moth - a large, colourful insect. *Forest & Bird* 13 (6): 28-32.
- Johnson, P.J. and Brooke, P. 1989: Wetland Plants in New Zealand. DSIR Publishing, Wellington.
- Murdoch, G.J. (compiler) 1996: A History of the Human Occupation of the Whakakaiwhara Block. ARC Regional Parks Service.

Figure 1. Map of Duders (Umupuia) Regional Park (from ARC Draft Management Plan).



## Appendix: Duders (Umupuia) Native Plants Species List

### Ferns & Fern Allies

*Adiantum cunninghamii*  
*A. hispidulum*  
*Arthropteris tenella*  
*Asplenium flaccidum*  
*A. oblongifolium*  
*A. polyodon*  
*Azolla rubra*  
<sup>+</sup>*Blechnum "capense"*  
*Blechnum filiforme*  
*B. minus*  
*Cyathea dealbata*  
*C. medullaris*  
*Deparia petersenii*  
*Dicksonia squarrosa*  
*Diplazium australe*

*Doodia media*  
*Histiopteris incisa*  
*Hypolepis ambigua*  
*Lastreopsis glabella*  
*L. microsora*  
*Paesia scaberula*  
*Phymatosorus pustulatus*  
*P. scandens*  
*Pneumatopteris pennigera*  
*Polystichum richardii*  
*Pteridium esculentum*  
<sup>+</sup>*Pteris macilenta*  
*Pteris tremula*  
*Pyrrhosia eleagnifolia*

### Gymnosperms

*Agathis australis*  
*Dacrycarpus dacrydioides*  
*Dacrydium cupressinum*  
*Phyllocladus trichomanoides*

<sup>+</sup>*Podocarpus hallii*  
*Podocarpus totara*  
*Prumnopitys ferruginea*  
*P. taxifolia*

### Dicotyledons

*Acaena anserinifolia*  
*Alectryon excelsus*  
<sup>+</sup>*Apium prostratum*  
*Avicennia marina*  
*Beilschmiedia tarairi*  
*B. tawa*  
*B. tawaroa*  
*Brachyglottis repanda*  
*Calystegia sepium*  
*C. soldanella*  
*Carpodetus serratus*  
*Clematis paniculata*  
<sup>+</sup>*Coprosma arborea*  
*C. grandifolia*  
*C. macrocarpa*  
*C. macrocarpa* x *C. robusta*  
*C. rhamnoides*  
*C. robusta*  
<sup>+</sup>*C. spathulata*  
<sup>+</sup>*Coriaria arborea*  
*Corynocarpus laevigatus*  
*Cotula coronopifolia*  
*Drosera auriculata*  
*Dysoxylum spectabile*  
*Gaultheria antipoda*  
*Geniostoma rupestre* var. *ligustrifolium*  
*Griselinia lucida*  
*Haloragis erecta*  
*Hebe macrocarpa* var. *macrocarpa*  
*H. stricta* var. *stricta*  
*Hedycarya arborea*

*Knightia excelsa*  
*Kunzea ericoides*  
*Leptospermum scoparium*  
*Leucopogon fasciculatus*  
<sup>+</sup>*Limosella lineata*  
*Litsea calicaris*  
*Lobelia anceps*  
*Macropiper excelsum*  
*Melicytus ramiflorus*  
*Metrosideros diffusa*  
*M. excelsa*  
*M. fulgens*  
*M. perforata*  
*Muehlenbeckia complexa*  
<sup>+</sup>*Myoporum laetum*  
*Myrsine australis*  
<sup>+</sup>*Olearia albida* var. *albida*  
*O. furfuracea*  
*Parsonsia* sp. (<sup>+</sup>*P. heterophylla*)  
*Pittosporum eugenoides*  
*Plagianthus divaricatus*  
*Polygonum salicifolium*  
*Pomaderris phyllicifolia* var. *ericifolia*  
*Pseudopanax crassifolius*  
<sup>+</sup>*P. lessonii*  
*P. hybrids*  
*Rubus cissoides*  
*Sarcocornia quinqueflora*  
*Solanum americanum*  
*Sophora microphylla*  
*Vitex lucens*

### Monocots (excl. grasses & orchids)

*Astelia banksii*  
*Baumea juncea*  
*Bolboschoenus* sp.  
*Carex dissita*  
*C. lessoniana*  
<sup>+</sup>*C. litorosa*  
<sup>+</sup>*C. secta*  
*C. virgata*  
*Collospermum hastatum*  
*Cyperus ustulatus*  
*Dianella nigra*  
*Freycinetia banksii*  
*Gahnia lacera*

*Isolepis cernua*  
*I. nodosa*  
*Juncus gregifforus*  
*J. maritimus*  
*J. sarophorus*  
*Lemna minor*  
*Leptocarpus similis*  
*Phormium tenax*  
*Rhopalostylis sapida*  
*Ripogonum scandens*  
*Typha orientalis*  
*Uncinia uncinata*

#### Orchids

*Caladenia* sp.  
*Microtis unifolia*

*Thelymitra longifolia*  
*T. ?pauciflora*

#### Grasses

*Isachne globosa*  
*Microlaena stipoides*

*Oplismenus imbecillis*  
*Stipa stipoides*

#### Legend

† recorded by others; not seen by ABS

Note: we did not explore "Big Bush". It would be a safe bet that the species list would be somewhat longer if we had.

### A bryophyte list for Motukorea (Browns Island), Inner Hauraki Gulf

Jessica E. Beever & John E. Braggins

The visit of the Botanical Society on 18 August 1996 to Motukorea (Browns Island) provided an opportunity to prepare a bryophyte list for the island. Much heavy rain in the night preceding our visit meant these plants were in beautiful condition. Somewhat to our surprise, rather than the assemblage of weedy pasture species we had cynically expected, a rich diversity of taxa were found. Particularly for the mosses, the diversity of volcanic rock provided substrates of varying textures and water holding capacity, with especially good representation of the family Pottiaceae. A recent generic monograph for that family (Zander 1993) is subtitled 'Mosses of Harsh Environments', which puts the lie to the common concept of mosses being confined to continually moist habitats. Many species are indeed well adapted to the intermittent water available on exposed volcanic rock in the Auckland environment. In fact the lava blocks of the derelict wharf at which we landed proved such an impressive moss garden, that one of us failed to catch up with the main party until mid-afternoon. Boulders lying in the pasture, tuff on the northern coast, and the scoria of the cone, particularly in shaded entrances to rabbit burrows, all supported a good variety of mosses. As expected, liverworts were found to be less diverse and generally less common than mosses in this relatively dry and harsh environment. Few epiphytes, either mosses or liverworts, were seen, due in part to the paucity of host trees, as well as to the relatively dry conditions prevailing on the island. The most common liverwort was *Lunularia cruciata*, well known as a weed of plant pots. Other thallose liverworts, *Reboulia*, *Targionia* and *Plagiochasma* were each represented by their only New Zealand species. The latter two are rather uncommon in the Auckland area. The greatest diversity of liverworts was seen on the steep cliff area on the tuff ring on the eastern side of the island. Among leafy liverworts, *Chiloscyphus* spp. were the most common. In addition *Frullania solanderiana* was recorded, both as dark red plants on rocks in exposed sites, often near the coast, and as dark green plants on shaded bark in the coastal cliff forest remnant. The specimens of *Fossombronia* found were all immature, lacking the spores necessary for identification to species level. While the rich bryophyte communities on the sea cliffs should be self-maintaining, those in the open grassland are under some threat by overgrowth from pasture species. In this brief survey, 33 species of moss and 8 species of liverwort were recorded. In the list that follows moss names follow Fife (1995) unless authorities are given. Voucher specimens have been lodged in AK (mosses) and AKU (liverworts). Voucher numbers are authors' collection numbers, JE Beever (mosses) and JE Braggins (liverworts).

#### Mosses

*Bryoerythrophyllum jamesonii* 86-10b  
*Bryum argenteum* 86-02d  
*Bryum billardierei* 86-06, 86-34e  
*Bryum campylothecium* 86-28  
*Bryum dichotomum* 86-36b  
*Bryum erythrocarpoides* 86-30  
*Campylopus* sp. 86-21

*Didymodon australasiae* 86-16a  
*Didymodon torquatus* 86-16c  
*Fissidens curvatus* 86-14  
*Fissidens leptocladus* 86-25b  
*Fissidens megalotis* Schimp. ex C. Muell. 86-12b  
*Funaria hygrometrica* 86-32b  
*Grimmia pulvinata* 86-35