harbour years ago. Those who had landed at Rakino were most hospitably entertained by Mr. Sandford, who lives here with his family, and raises sheep and cattle. The Club had evidently been expected, for extensive preparations had been made, and food and drink were supplied throughout the whole day. The excursionists had reason to be thankful to Mr. Sandford and family for their very courteous attention. Rakino did not seem to yield anything very remarkable from a naturalists' point of view, and ferns and plants worth taking being rare, some attention was directed to oyster-gathering, and it must be confessed, with great success. Oysters abound on the rocks surrounding the island and are to be had in cartloads. About 4 p.m., the Tainui arrived from Otatou, and re-embarkation commenced. The last stragglers were on board about 5.10, and a start was made for home. The route taken was the alternative one round the outside of Motutapu, by Rangitoto Reef, and through the Channel. Queen-street wharf was reached shortly after 7, and the excursion had proved a most enjoyable one."

Auckland Botanical Society Trip to Dunn's Bush, Puhoi
15 September 2001

Maureen Young & Arthur Dunn

As I try and decipher my notes taken on the day I am reminded of the weather. In a word: wet. The route to our meeting point was along the valley of the Puhoi river showing starkly the effect of the floods some weeks previously and we were spared those conditions, but the ground underfoot was slippery in the extreme and the quote of the day was 'Even Helen got muddy.'

We met at the Dunn homestead and Arthur explained how the bush had once been part of his farm, but was covenanted, and eventually given to, the Queen Elizabeth 2 Trust. An active trapping programme has succeeded in reducing possum numbers greatly.

The reserve consists of two tracts ('Arthur's Bush' and 'Val's Bush') and our plan was to visit both but as we moved at botanists' pace, we were still in Arthur's Bush at lunchtime. As the rain showed no sign of stopping we did not go to Val's Bush, which meant we did not see the carmine rata which we were told was just coming into flower.

However we found *Rhabdothaminus solandri*, and *Alseuosmia* sp. in flower, as well as *Pterostylis banksii* and *P. alobula, Acianthus sinclairii* with a few flowers left, and the remains of some *Corybas* sp.

We saw very few Kauri trees, the principal gymnosperm being kahikatea, and some of these were mighty; the tamest had a circumference of 6 m and a diameter of 1.9 m (but it was hollow). There were also large specimens of the hybrid *Metrosideros excelsa* X *robusta*.

A welcome sight was the abundance of *Collospermum hastatum*, both perching and on the ground(= no possums). At lunchtime a sharp-eyed botanist spied a *Raukawa edgerleyi* epiphytic on a tree-fern. We noticed four different tree-ferns, as well as *Cyathea medullaris. C. dealbata and Dicksonia squarrosa*, there were colonies of *C. smithii* in the valleys. A new *Asplenium* to some of us, *A. lamphrophyllum*, proved easy to recognise by its oil of wintergreen scent. We also found *A. hookerianum*, a delicate little species. On the way up the hill, in a (normally) dry area we found a colony of *Libocedrus plumosa* looking healthy.

By this time most of our concentration powers were on keeping ourselves upright and the wet hair out of our eyes, also my ballpoint pen stopped writing on the wet page, so here the account must end. But not without a word of appreciation to Arthur and Val Dunn for making us welcome, and for preserving and making public an area with a rich variety of indigenous plants.

New Zealand Spinach in Mangere

Mike Wilcox

New Zealand spinach, also known as Warrigal greens, and, in Maori, kokihi or rengamutu (*Tetragonia tetragonioides* (Pall.) O. Kuntze: Aizoaceae) seems to be quite rare in the wild (de Lange & Cameron 1997), at least around Auckland. It is a prostrate, sprawling plant with soft stems and rather succulent foliage and can spread to around 2 metres. Leaves are oval or diamond-shaped and about 75 - 100 mm long. The small, greenish yellow flowers appear at the leaf bases throughout most of the year. It gets its unimaginative specific name from the fact that it was first described by Pallas in 1781 as *Demidovia tetragonoides*.

In 1999 I found single-plant colonies, both apparently wild, of New Zealand spinach at two sites in Mangere. One was on the old Mangere Bridge itself, where it was growing amongst buck's horn plantain (*Plantago coronopus*) on the seaward side; the other was on a small rocky islet in Ambury Regional Park. In October 2000 I took some cuttings home and set them. Now we have a thriving patch in the garden of the local provenance, with an endless supply of this nutritious vegetable, rich in Vitamin C (Phillips & Rix 1995; Pomare 2000). The leaf reputedly has a high soluble oxalate content which, if consumed in large quantities, can be toxic, and is best not eaten raw. It requires

removal by blanching in boiling water before the leaf is suitable for human consumption. It retains a good volume and firmish texture after cooking, and has a mild flavour improved with salt and pepper and a little butter.

Both the Mangere colonies are still hanging on, and the one on Mangere Bridge has survived a dunking by a weed- spraying gang. It is evidently a perennial here - not an annual as indicated in some references (e.g. Prakash 1967). Other records I know about (with help from Graeme Hambly, Maureen Young, Steve Benham and Rhys Gardner) of New Zealand spinach in the wild are the Kermadec Islands (Sykes 1977), Kohuora Crater (Papatoetoe), Duck Creek (Manukau Harbour), Wood Bay, Rangitoto Island, Stanmore Bay, Clark's Beach, Big Manly, Scott's Landing (Mahurangi), Horseshoe Island in Whangateau Harbour (Asquith, Hambly & Young 2001), and Mangawhai Harbour.

New Zealand spinach is indigenous not only to New Zealand and Australia but is also found naturally in Norfolk Island, Lord Howe Island, New Caledonia, Tonga, China, Japan, and the western coast of South America (Prakash 1967; Whistler 1992; Green 1994). In Australia it is primarily a coastal plant, but it also occurs inland on salty soils in the Murray-Darling catchment (Gray 1997). It is considered an agricultural weed in parts of Queensland. The dry horny fruits float in water, and can remain viable for more than a month in salt water. The species is thus likely to have been dispersed by sea. It is reported to be adventive in California, Oregon, the Azores, and Portugal, and to be sometimes grown as a vegetable in Europe (Phillips & Rix 1995).

In contrast, the beach spinach (*Tetragonia implexicoma* (Miq.) Hook. f., syn. *Tetragonia trigyna* Banks & Sol. ex Hook.f.) is commonly encountered on shaded sea cliffs and under pines on the Auckland west coast. Beach spinach is widely distributed in coastal New Zealand, and is also native to Norfolk Island and southern coastal Australia. It was originally described in 1864 as *Tetragonia trigyna*, but is now considered to be identical to *T. implexicoma*, described in 1856 from Australia (Green 1994). It can become a sprawling semi-woody liane, and is also edible. The leaves are considerably smaller than in New Zealand spinach, and the ripe fruits differ in being red and fleshy.

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Bryophyte Field Trip to Rangitoto Island

Matt Renner

On 21 July 2001, 21 people gathered on what was a brisk day threatening rain, to appreciate the Bryophyte flora of an island, which not only is renown for being hot and dry during summer, but also where movement on hands and knees is nigh impossible. Our leader, John Braggins, who had not been to the island since immediately after the eradication of browsing mammals (possums & wallabies), commented on the general health of several species, particularly *Asplenium oblongifolium.*

A surprisingly diverse array of bryophytes were observed on the island. The diversity of habitats present meant that completely different bryophyte communities, i.e. communities as disparate as those dominated by *Rhacomitrium prüinosum, Polytrichum juniperinum,* with the lichens *Cladina confusa* and *Cladia retopora,* resembling the herbfields dominated by the *same* suite of species in *alpine* regions, and communities typical of the interior of lowland forest, could be observed over the distance of a few metres, an ideal situation when the best method of observation involves movement on hands and knees, unfortunately Rangitoto is not that conducive to this sort of carry on.

The damp turf by the start of the summit track was the first place to be "done over", partly due to the earthy nature of the substrate, which facilitated serious investigation that revealed the presence of the tiny *Riccia croalsii,* and *Lethocolea pansa* (a new record to John Braggin's draft list). *Asterella australis* also grew in this region, complete with mushroom like archegoniophores (reproductive structures).

Forest interiors were dominated by the liverworts *Plagiochila obscura,* and *Chiloscyphus semiteres,* with the mosses *Dicranoloma billiardierei, Rhacopilum convalutaceum,* and *Bryum* spp. including *B. pyriforme.* Other lithophytic liverworts of the forest interior included *Radula* sp., *Heteroscyphus coalitus, Chiloscyphus ?subporosa,* and *Cuspidatula monodon.* The flora of the margins of the forest patches, particularly the southern margin, was perhaps the most interesting, the favourable combination of light