



Fig. 9. Rain closing in as we descended through soggy farmland. Photo: JS.

of the physical environment or human action. Being so close to a trap line, any ongoing mortality at this site will be able to be monitored in future.

Two large northern rata trunks formed something of an archway for us to walk under as we neared the bottom of this trap line. The species-rich forest gave

way to an area dominated by tree ferns, then we left the forest and made our way down a steep treacherously pugged paddock to the road, finishing our walk as it began to rain (Fig. 9). The forest was remarkably free of weeds.

A species list for Tamahunga was published following the previous ABS Tamahunga trip (Young 2007). Additions following this trip are as follows:

Ferns and fern allies	Dicotyledons
<i>Phlegmariurus varia</i>	<i>Coprosma spathulata</i>
Gymnosperms	Monocotyledons
<i>Prumnopitys ferruginea</i>	<i>Dianella latissima</i>
<i>Prumnopitys taxifolia</i>	<i>Drymoanthus adversus</i>
	<i>Uncinia zotovii</i>

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Field trip to Otata Island, Noises Islands, Hauraki Gulf

Ewen K. Cameron



Fig. 1. The last of the second boatload of Bot Soccers disembarking from *Taikahu* on Otata Island's main pebble beach. Photo: Jacqui Geux. Unless stated differently all photos taken on 26 Nov 2016.

After the postponement of the scheduled 15 October 2016 Bot Soc field trip, due to strong winds, the Otata Island trip eventually occurred on 26 November. The Department of Conservation (DoC) kindly transported us on their service boat "Taikahu" which for that part of the Hauraki Gulf is surveyed to carry 12 passengers. To get our group of 22 to Otata Island DoC took 12 from Bayswater (departing at 9am), and the other ten took the public ferry to Waiheke Island. After disembarking the first load, *Taikahu* doubled back to Waiheke to collect the second group. By 10.30 am the party was complete on Otata Island.

The Noises Islands lie 1.4–5.5 km to the NE of Rakino Island in the inner Hauraki Gulf. There are nine islands/islets in the group and they are all owned by the Neureuter family (held in a Trust). The largest island of the group is Otata Island (15.0 ha),



Fig. 2. Large-leaved kawakawa with overlapping leaf bases occurs from the Hauraki Gulf to Mayor Island and is discussed by Gardner (1997: 301) who included it within *Piper excelsum* subsp. *excelsum*. Photo: Otata Island, EKC, 27 Nov 2015.

50 m asl, and clothed in advanced regenerating native forest. It is still recovering, especially on the northern slopes, from a fire that burnt much of the island around 1930. For a recent brief history of the group, a report of the last Bot Soc visits there in 1993 and 1998, and a vascular plant list, see Cameron (1998). For the mosses see Beever (1993). Recently EKC has been re-surveying the vascular plants of the Noises group, and the findings to date have fed into the Noises Islands Biodiversity Plan currently being developed by Treescape Environmental, funded by the Auckland Zoo. An updated vascular flora is separately being developed by EKC.

The Noises Islands are free of exotic mammals and most weed species, thanks mainly to the ongoing hard work of the owners. Otata's vegetation is in an advanced state of regeneration, being dominated by broadleaved trees such as mahoe (*Melicactus ramiflorus*) and kohekohe (*Dysoxylum spectabile*). Locally houpara (*Pseudopanax crassifolius*) and whauwhaupaku (*P. arboreus*) dominate the canopy near the summit, with emergent pohutukawa (*Metrosideros excelsa*) along the cliff tops.

Once disembarked (Fig. 1) we instantly knew we'd arrived somewhere special: native bush down to the shoreline; no weeds; no jetty; virtually no sign of human modifications; birds (oystercatchers and tui) calling loudly. The large-leaved "Hauraki Gulf" form of the kawakawa (*Piper excelsum*) (Fig. 2) added to an outer-Gulf feel to the island; and a mass of Raukawa geckos (*Woodworthia maculatus*) sleeping in a "lizard motel" (a couple of small pieces of Onduline – corrugated roofing material), placed to increase the resting habitat for them. We assembled by the modest bach (Fig. 3) tucked out-of-sight from the coast. This is where the Neureuter families spend their summer holidays. Along one side of the bach a large planted mawhai vine (*Sicyos mawhai*) bore flowers and green spiny fruit (Fig. 4). This species used to occur on Otata, as the herbarium specimens testify: Cheeseman collected it from here [Otata] in



Fig. 3. This bach was built in 1930 with an addition in 1952. Photo: EKC, 11 Oct 2016.



Fig. 4. Mawhai over 8 m long, a tendril climber; the male flowers are on long stalks; and the females in this image have finished and have developed into green spiny fruiting balls. This plant was planted as seed (ex Mercury Islands) by the bach on 22 Nov 2011 and first appeared in the spring of 2016, i.e. five years to germinate. Photo: Mark Paterson.



Fig. 5. Flat-topped Otata Island viewed from Motuhoropapa, looking SE. Photo: EKC, 15 Dec 2015.



Fig. 6. One of the open grassy areas on the northern coastal slopes. Looking WNW towards Motuhoropapa, the second largest island of the Noises group. Photo: Jacqui Geux.



Fig. 7. The native *Geranium solanderi* in a grassy opening on the northern slopes. Photo: Joshua Salter.



Fig. 8. *Pellaea* aff. *falcata* and a frond of *Asplenium oblongifolium* – the shape and size of the pinnae are intermediate between *P. falcata* and *P. rotundata*. Photo: Dhahara Ranatunga.



Fig. 9. Coastal plants study, including tussocks of *Austrostipa stipoides*, by the NW corner of Otata. Photo: Joshua Salter.

1883 (AK 9196-97) and it was collected as recently as 1936 by Ruth Mason (CHR 22195, "Noises Island"). Its local extinction was probably caused by the widespread Cucumber mosaic virus (CMV) of cucurbit crops that can severely decrease the growth of mawhai (Delmiglio & Pearson 2006).

One of our group, Zengqi Zhao, a nematode specialist from Landcare Research, spent most of his time checking out discoloured leaves for nematodes. We followed a rough track around the island, anti-clockwise. We explored a rocky point ('Mum's Point') on the eastern side, enjoyed the coastal views, and added *Acianthus sinclairii* to the island's species list. The naturalised broomrape (*Orobanche minor*) was particularly common at this locality. In the adjacent valley we stopped for lunch, before ascending up to the flat trig point that the regenerating forest has long-overtopped (Fig. 5). From here we headed west, along the steep northern shrubby coastal slopes.

The native broom, *Carmichaelia arborea*, was frequent in the open, and although past its peak there were still enough of the pale pea flowers with purple strips to admire. At times we came out into grassy openings where the views were admired (Fig. 6) and smaller native herbaceous plants were spotted, like *Geranium solanderi* (Fig. 7), *Oxalis exilis*, and *Carex inversa*, along with several exotic species: *Lotus angustissimus*, *Centaurium erythraea*, *Silene gallica*, *Vicia sativa*, *V. tetrasperma* and many grass species.

Before coming out of the forest near the NW corner of the island, three plants of *Pellaea* aff. *falcata* (Fig. 8) were spotted under a canopy of 8m tall houpara. They were an addition to the list. Out on the coastal greywacke rocks (Fig. 9) we saw: *Austrostipa stipoides*, *Chenopodium triandrum* (Fig. 10), *Cotula coronopifolia*, *Crassula sieberiana*,



Fig. 10. *Chenopodium triandrum*, local, on the NW rocky coast. Photo: Joshua Salter.

Disphyma australe, *Parapholis incurva*, *Sarcocornia quinqueflora*, *Senecio lautus*, *Spergularia tasmanica* (with pink flowers) and *Tetragonia implexicoma*.

We then preceded south, part-way along Sandy Bay on the west coast and then headed inland to intercept the loop track. As we climbed, bamboo sedge (*Gahnia lacera*) became a rather dense ground cover and slowed our progress. In a small opening over-topped by pohutukawa, Maureen spotted a small sterile pea, which Ewen later identified as white clover (*Trifolium repens*) – a reflection of when the island was more open. We eventually stumbled onto the track and proceeded through the forest back down to the bach. There was time for afternoon tea, and a bit more botanising, before departing on time from the east-facing beach, Clara's Cove, which was sheltered from the SW wind that had freshened during the day.

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Botany of Maungauika / North Head, Devonport: End-of-year gathering, 17 December 2016

Mike Wilcox and Steve Benham

Introduction

North Head (Fig. 1) is a prominent volcanic scoria cone rising to 65 m a.s.l. overlying a tuff cone at the northern entrance to Waitemata Harbour (Hayward et al. 2011). It is one of Auckland's oldest volcanoes, erupting over 50,000 years ago. Tuff beds are well preserved and exposed on the southern side. Almost two thirds of the reserve is bordered by the coast where erosion of the tuff cone has formed a rocky shore and 10 m-high cliffs on the eastern seaboard. It is officially known as Maungauika/North Head, an 8.6 ha Historic Reserve (Department of Conservation 1999).

North Head has had a long history of pre-European occupation with a large urupa sited below a cliff over-hang. A fort was set up in 1885 to guard Auckland from invasions (which never came). World War II saw further military installations (Department of Conservation 2007). The Department of Conservation has used the old military buildings as its Auckland Area base since 1996. The Historic



Fig. 1. North Head. Photo: Jonathan Boow, 10 Feb 2005.

Reserve is one of the most popular recreation sites within the Auckland region for tourists and Aucklanders with an estimated 400,000 visitors annually.

Botanically, North Head's main claim to fame is being one of the known Auckland sites of *Lepidium flexicaule*, a native cress. It was collected from there by Thomas Kirk (T. Kirk 342, Waitemata, North