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Paratahi Island, Karekare – revisited

Ewen K. Cameron and Mike D. Wilcox

Since the initial botanical survey in January 1991 of Paratahi Island (wrongly spelt Panatahi on the NZMS 260 Q11 map, Graeme Murdoch pers. comm.) by Cameron (1991) at Karekare Beach on Auckland's exposed west coast, the sand has been steadily building up (Figs. 1-3). The extensive sand mass at Whatipu (Williams 1977) is steadily moving northwards with the local ocean current. Possibly the origin of the sand was the Taupo eruption of about 26,500 years ago, transported down the Waikato River and now moving north up the west coast (B.W. Hayward pers. comm. *in*: Cameron 2006: p.195). In 1991 EKC had to swim out about 50 m to reach the island at low tide, on 25 October 1999 he was just able to walk onto the island for the first time during a low spring tide, and during recent months the island has been accessible by foot from nearly mid-tide downwards – a reflection of the continuing build-up of sand at Karekare. Taking advantage of the easy access we recently separately visited Paratahi Island: EKC on 14 March 2012 and MDW on 8 April 2012.

Fig. 1. Paratahi Island, Karekare, near high tide in 2006. Photo: EKC, 4 May 2006 from Comans Track.

Fig. 2. Paratahi Island near low tide, looking NW. Photo: EKC, 14 Mar 2012.

Fig. 3. Paratahi Island near low tide, looking SW. Photo: EKC, 14 Mar 2012.

The island is 115 m long × 40 m across (note - underestimated in 1991) with the main axis running NNE-SSW. The summit is towards the northern end with a lower saddle near the island centre (Fig. 2). The island is composed of columnar-jointed dacite, possibly a similar intrusion to that forming The Watchman behind the middle of Karekare Beach (B.W. Hayward pers. comm., Mar 2012). The Maori name Paratahi means 'the sibling that stands apart'. The island is also known as Te Toka Paoke or 'the rock that wandered' (Murdoch 2006: p.21 and fig) – a reflection of the isolation of this island. The island bares the full force of the Tasman Sea: pounding surf, sand blasting and scouring – only low-lying and well-attached plants survive.

Flora

Apart from a single clump of New Zealand ice-plant on the southern flank, all the vascular plants were confined to the summit area down to c.4 m asl on the landward side (Fig. 2, 3, 4). All four vascular species observed in 1991 were still present, and the exotic puha (*Sonchus oleraceus*) was the only vascular addition to the list (see Table 1).

No bryophytes were seen. However, lichens were frequent, especially low-stature foliose and crustose lichens on the bare rock from the splash zone to the summit on the eastern side. In fact the yellow-orange *Xanthoria ligulata* was locally so dominant here it could be seen from some 50 m away. From photographs taken by EKC and a single collection, Dan Blanchon identified the following lichens: *Caloplaca allanii* (AK 330737), *Physcia* ?*caesia* and *Xanthoria ligulata*. The *C. allanii* was previously known only from the type collection by Lucy Cranwell in 1932 on maritime rocks at Anawhata (Galloway 2007, Dan Blanchon pers. comm.).

The tiny terrestrial green alga, a *Prasiola* species (Fig. 5), which is dependent on guano, was present only locally on the south side on near-vertical faces 5-8 m asl. Within the Auckland region we've only ever seen it on islands where gannets nest: Oaia Island off

Table 1. Vascular plants with notes recorded on Paratahi Island in March 2012.

Vascular plant species	Notes (voucher specimen)
NZ ice plant (*Disphyma australe*)	abundant as mats on upper part of island
Taupata (*Coprosma repens*) (Fig. 5)	abundant as prostrate spreading plants on upper part of island (AK 330468)
Shore groundsel (*Senecio lautus*)	abundant annual, mainly in rocky cracks between the taupata and NZ ice plant mats, mainly as dried up adults or young seedlings (AK 330469)
NZ climbing spinach (*Tetragonia implexicoma*)	single seedling plant by the summit – a different plant from the single adult one seen in 1991
Puha (*Sonchus oleraceus*)	4 young plants (2 starting to flower) in a N-facing gut of organic matter – new record for the island – all uprooted (AK 330464)

Fig. 4. Prostrate taupata with ripe fruit, locally abundant on Paratahi Island, yet virtually absent on the adjacent mainland cliffs. Photo: EKC, 14 Mar 2012.

Fig. 5. The minute green terrestrial alga, a *Prasiola* species, 1-2 mm tall, sward-forming by seasonal guano seep. Photo: EKC, 14 Mar 2012.

Fig. 6. Bull kelp (*Durvillaea antarctica*) with holdfasts in the coralline zone below the mussel zone, low tide, Paratahi Island. Photo: MDW, 19 Sep 2009.

Muriwai (Cameron & Taylor 1989) and under the adjacent mainland colony; Horuhoru (Gannet) Rock off Waiheke Island (Cameron & Taylor 2008, Wilcox 2008); and on Mahuki Island off Great Barrier Island in 2009 (EKC pers. ob., voucher AK 307212).

Seaweeds/algae were collected by EKC in 1999 and by MDW in 2012 and recorded in Table 2. Due to the sand build-up we suspect that the algal flora has been depleted somewhat since 1999 – compare the records collected 21 years apart (Table 2). Bull kelp (*Durvillaea antarctica*) was the dominant brown seaweed, scattered along the western fringe and northern end of the island – its holdfasts close to the sand/rock boundary (Fig. 6). If the sand builds up much more this algae-fringe will continue to be buried. The only other brown alga now present appears to be *Endarachne binghamiae*, abundantly attached to green mussels. Apart from these, the main assemblage of algae is to be found on the lower intertidal northern edge of the island, where rock meets sand. The scouring action of the sand now limits the flora to mainly short-turfing, sand-tolerant red algae, the commonest being *Jania rosea, Pterosiphonia pennata, Centroceras clavulatum* and *Polysiphonia scopulorum*. The green alga *Cladophora feredayi* occurs in sparse tufts, notable here for having very tough, wiry stipes, enabling it to hang on to the substrate in the boiling, sand-scouring surf.

Fauna

The New Zealand fur seal population is still recovering from sealing activities up until the early 20th century. They have been commonly using this island as a haul out for at least the last several decades (Fig. 7), but the closest known fur seal breeding colony is Gannet Island some 19 km off the coast from Aotea Harbour south of Raglan. During EKC's visit in 2012 a single male fur seal was resting on the western side of the island and a small number of bones up on the northern side of the island turned out to be of a small seal pup (only c.20% of the bones were present) – perhaps born on the island? Fur seal pups are being born at many new sites in New Zealand every year (Laura Boren pers. comm.).

Presumably the white-fronted terns and red-billed gulls previously recorded nesting on the island (Cameron 1991) still nest there, but our present visits were outside their nesting season. A flock of c.20 starlings departed from the island as EKC approached in 2012, a pair of variable oystercatchers was active by the base of the island, and the occasional red-billed gull and black-backed gull flew past as he was

Fig. 7. Young fur seals frequently rest up on Paratahi Island. Photo: MDW, 19 Sep 2009.

on the island. The starlings probably use the island as a safe roost site, and perhaps feed on the taupata fruit when ripe.

There were very few loose rocks to turn over to look for invertebrates and lizards – in a cursory look EKC saw several spiders, native shore earwigs but no lizards. No signs of rats were seen (i.e. droppings, feeding stations or gnaw marks on taupata stems).

Discussion

The abundance of taupata on Paratahi Island, and the near absence of it on the adjacent coastal cliffs, makes an interesting comparison, and is presumably related to rat-browsing on the mainland taupata (see Cameron 1991). The missing expected vascular plant species that often occur on similar exposed islands, as noted previously (Cameron (1991), include glasswort (*Sarcocornia quinqueflora*) and *Einadia trigonos*.

The nesting seabirds are threatened by the build-up of sand which gives humans and predators easy access to the island – the first time in living memory. The seabirds are likely stop nesting there if they are too disturbed. The build-up of sand, connecting the island to the mainland for increasingly longer periods, is a threat to many of the biotic features recorded here.

Table 2. Seaweeds with voucher numbers collected on Paratahi Island in 1991 and 2012.

Algae group	1991	2012	Voucher number
Brown algae			
Durvillaea antarctica	X	X	AK 242558
Endarachne binghamiae		X	
Red algae			
Centroceras clavulatum	X	X	AK 242602, 330646
Cladhymenia oblongifolia	X		AK 242561
Gelidium caulacantheum	X		AK 247599
Gracilaria truncata	X		AK 242560
Grateloupia doryphora	X		AK 242557
Gymnogongrus humilis		X	AK 330644
Gymnogongrus torulosus		X	AK 330645
Helminthocladia sp.	X		AK 242603
Jania rosea		X	AK 330649
Lophothamnion hirtum	X		AK 242565, 242604
Polysiphonia scopulorum		X	AK 330648
Porphyra "LGD30"	X		AK 242559
Pterosiphonia pennata		X	AK 330650
Rhodymenia sp.	X		
Sarcothalia circumcincta	X		AK 242562
Green algae			
Cladophora feredayi		X	AK 330647
Prasiola sp.		X	AK 330463, 330643

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A visit to Taranga (Hen) Island

Maureen Young
Photographs by Tricia Aspin

While driving south from Whangarei in September 2011 after an Auckland Botanical Society (ABS) weekend camp, I looked longingly out to sea to the craggy silhouette of Taranga, the "Hen" of the Hen and Chickens island group, and thought sadly to myself that I would never get a chance to visit this conservation island. But by one of those serendipitous coincidences, within a week I had a communication that the Ngatiwai Trust Board wanted to organise a "capacity building" project for young Ngatiwai members. This project was to have a biological component; by learning something of the ecology of plants, birds, lizards and invertebrates the youngsters would be better prepared to undertake the kaitiaki responsibilities which go with having mana whenua over the east coast islands.

So it was that from late November to mid December 2011 ABS members Mere Roberts and Geoff Davidson worked on the island with a small group of young people for one week, and Tricia Aspin and I took over for a second week with another group (Plate 1A), our aim being to teach something of the botanical component.

As always on such an exercise much can be learned from those who have gone before. In 1935 Lucy Cranwell and Lucy Moore (the two Lucys) published a paper, *Botanical Notes on the Hen and Chicken Islands*, outlining their observations from two trips undertaken in November 1933 and November 1934 (Cranwell & Moore 1935).

In 1988 Katie Reynolds (1988) wrote evocatively of her memories of the 1934 visit to Taranga with the two Lucys, and a fourth friend, Dorothy Ellin. The Auckland University Field Club visited the Hen in August 1953 and the resultant papers were included in their Journal, *Tane 6*. The Off-shore Islands Research Group (OIRG), consisting of Field Club "oldies", visited in August 1977, and *Tane 24* contains their reports, the most useful to botanists being Anthony Wright's annotated list of vascular plants (Wright 1978). A further visit by Anthony Wright and Ross Beever in December/January 1990/91 produced many additional vouchered specimens in the Auckland Museum Herbarium (AK) (see Appendix for a secies list with additional observations from this present 2011 visit). Table 1 summarises the different elements of the flora observed.

Taranga is 19 km south-east of Whangarei Heads. It covers an area of 520 hectares, is 5km long by 2 km wide and rises to a height of 460 m. This remnant of a Miocene strato-volcano has a long axis running from west to east with a high rocky central ridge featuring several pinnacles and a remarkable balancing rock. On the north side are some sloping valleys that end in