Murimotu, North Cape

A. E. Wright & E. K. Cameron

It appears that virtually nothing has been published on the natural history of the island, Murimotu, off Titirangi Point at North Cape (grid reference NZMS 260 NO2 157541; Figures 1, 2). On the 23 October 1995 we briefly (*c.* 1 hr) visited the island with the Auckland Botanical Society while based at "Carl's Bach", Waikuku Beach from 21-24 October 1995. AEW had previously visited the island on 21 November 1975 and 16 October 1983 and made brief field notes and taken photographs.

Murimotu, also referred to as North Cape Island, covers 8.9 ha (Taylor, 1989) and is crowned with a navigation light at 97 m above sea level. The island consists of Cretaceous gabbro and microgabbro intrusions (Brook, 1989). Murimotu was gazetted as a Lighthouse Reserve in 1879 and the Maritime Safety Authority currently looks after the light. The administration of the island is currently under review and the Department of Conservation have requested management of it as a reserve. The island is only separated from the mainland by *c.* 75 m which can be crossed with dry feet around low tide on a gravel and boulder shelf. Access is usually by foot via the North Cape Scientific Reserve (entry by permit only), down the leading ridge from the plateau at the top of the Surville Cliffs.

Human history

Both Aupouri and Ngati Kuri Iwi have ties with the North Cape area. Ratima Petera to Dolly Brown (pers. comm., 1996) informed us that Tumatahina's people, who once lived in the general North Cape area (Waihi, Titirangi, Tekapoukura, etc), were chased by warriors onto Murimotu where they were forced to live for a short while. Although the enemy warriors remained on the adjacent Titirangi Pa, Tumatahina and his people were able to escape at night by plaiting a long flax rope to span the channel. A single swimmer took the rope across and the children' s mouths were tied with flax to keep them silent during the escape.

Fauna

Two landsnails (*Cytora tepakiensis*, *Tornatellinops novoseelandica*) were recorded for the island by Parrish in October 1988 (Goulstone *et al.*, 1993). The flax snail *Placostylus ambagiosus watti* was searched for at the same time ("presumed to have occurred there") but no sign of the snail or rats were found (Sherley & Parrish, 1989). On 29 October 1993 Parrish revisited the island and ranked the habitat as 'moderate' because it is a large island of regenerating scrub (Parrish's unpublished Survey Sheet). He also recorded the skink *Leiolopisma smithi* as present, that there was no sign of possums yet, and 53 species of plants (29 native, 24 naturalised).

Vegetation and flora

Few botanists appear to have visited the island. Cheeseman (1896: 363) records the island but appears not to have crossed the "narrow channel dry at low water" (see Figures 1, 2). Although Wheeler (1963) includes Murimotu (North Cape Island) within the boundaries for her "Species List for the North Cape Area" the island is not separately scored in the list. A search of the Auckland Museum herbarium (AK) database revealed only 17 previous collections, 16 by G. P. Adams in April 1968 and one by AEW in 1975.

Murimotu is rather steep (Figure 3) and covered in a mixture of exotic grassland with bracken (*Pteridium esculentum*) and regenerating native shrubland (1.5 - 2 m tall), including flax

(*Phormium tenax*), coastal toetoe (*Cortaderia splendens*) and dense stands of cabbage trees (*Cordyline ? australis / kaspar*). Although not inspected by us the cabbage trees have shorter wider leaves than the usual *C. australis* and appeared to be more like *C. kaspar* (S.P. Benham *pers comm.*, 1996). Other common shrubs are hangehange (*Geniostoma rupestre*), coastal karamu (*Coprosma macrocarpa*), taupata (*C. repens*) and *Coprosma neglecta*. The tallest plants on the island are pohutukawa trees 4 - 7 m tall on the steep rocky faces on the western side and the gentler regenerating slopes at the southern end. The island was probably repeatedly burnt earlier this century and regeneration has been retarded by its exposed locality and desiccation during the summer.

The total recorded vascular plant flora is 117 species (refer Appendix) of which 44% is exotic. This total includes additional taxa recorded by Adams (1968) and Parrish (1993). None of the native species are listed as Threatened species, but there is one on the Local Plant List: the Australasian *Picris burbidgei* (Cameron *et al.*, 1995: 26). This *Picris* was occasional in the open grassland on the steeper western slopes. *Coprosma neglecta s.str.* is one of the North Cape endemics and was a common low shrub on Murimotu. The *Chionochloa bromoides* record by Parrish is interesting as the next closest locality for this northern coastal snow tussock is the Cavalli Islands where it is common (see Wright, 1979). This record needs a field check - it may be a mis-identification of reduced *Cortaderia splendens* plants. Of the 49 recorded exotic species, all are herbaceous and environmentally non-threatening except for tree lupin (*Lupinus arboreus*) and perhaps apple of Sodom (*Solanum linnaeanum*) which are rather woody. Tree lupin was uncommon, with a few small shrubs scattered through rocky grassland on the western side of the island. Apple of Sodom was a pastoral weed and should be quickly overtopped by the regeneration.

The species list should be treated as preliminary since only the main ridge and the part of the island facing the mainland was covered by us and we did not have time to explore the east-facing shallow gully with a prominent cabbage tree canopy (Figure 4). The three ferns and taurepo (*Rhabdothamnus solandri*) recorded by Adams and not seen by us may have come from this area.

Discussion

Although both kanuka (*Kunzea ericoides*) and manuka (*Leptospermum scoparium*) are present on Murimotu it is surprising that they are not one of the common regenerating species. Perhaps this is because they have only recently reached the island from the adjacent mainland where they are common. We expect kanuka and manuka numbers along with pohutukawa (*Metrosideros excelsa*) to increase.

A study of the Murimotu cabbage trees should be made to clarify what species (or hybrid) they are. It is known that Ngati Kuri people periodically used the Three Kings Islands to catch and gather food and as a place of refuge from strife on the mainland (Judd 1996:37). It is possible that Three Kings cabbage trees (*Cordyline kaspar*) could have been transported to Murimotu by Ngati Kuri from the Three Kings and planted as a source of food. There is a recent collection by Peter de Lange of an odd cabbage tree, 2 m tall from the southern side of the North Cape Scientific Reserve, labelled *C.* cf. *kaspar* (AK 222936). It has short wide leaves and is presumably similar to the Murimotu plants.

We agree with Parrish who rated the island habitat as "moderate", for the following reasons:-

- it is a remote and sizeable island with good shrubby regeneration;
- the lack of environmental weeds;

Figure 1 Murimotu from ridge leading down to Titirangi Point, 21 September 1975. Two pohutukawa are arrowed (cf. Figure 3).

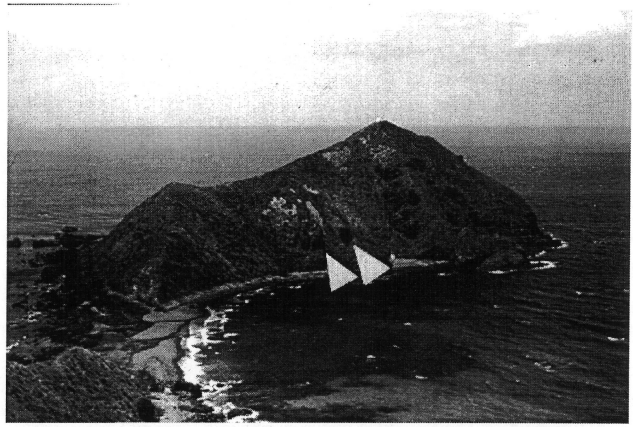

Figure 2 Murimotu from ridge leading down to Titirangi Point, 23 October 1995. Note that pohutukawa crowns have approximately doubled in size since 1975, and individual shrubs have coalesced to form more extensive shrubland at the expense of grassland.

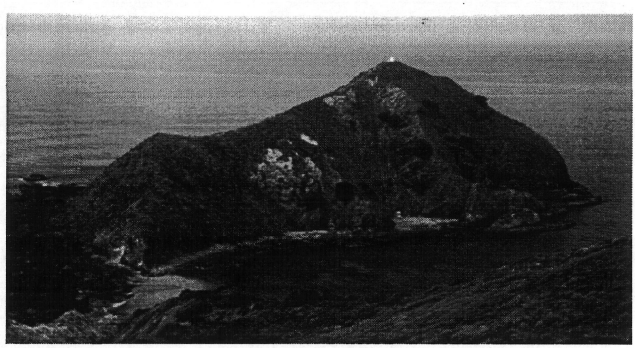

Figure 3 Murimotu, 23 October 1995. View to south-east from shore over rock fall with taupata across patchwork of flax, shrubland and grassland towards summit of island. Arrows denote human scale. The two large pohutukawa are arrowed in Figure 1.

Figure 4 Shallow east-facing gully with canopy dominated by cabbage tree regeneration. This gully was not explored, but is likely to provide several additional plant records.

- the apparent lack of rats and possums;
- the presence of at least 66 native vascular plant species, and that the island is very close to a large native seed source (reserved area of native shrubland and occasional forest). On the ridge opposite Murimotu native species such as *Carex breviculmis*, NZ broom (*Carmichaelia cunninghamii*), mawhai (*Cassytha paniculata*), akeake (*Dodonaea viscosa*), kawakawa (*Macropiper excelsum*), *Peperomia urvilleana* and hound's tongue fern (*Phymatosorus pustulatus*) are present. Many others not seen on Murimotu were also present in this adjacent area and they should naturally establish on the island as the regeneration progresses.

The island would make an ideal addition to the North Cape Scientific Reserve and it should be left to continue to regenerate naturally and be monitored every 2-3 years to check for environmental weeds and introduced mammals.

Acknowledgements

We thank the Department of Conservation for permitting and assisting Auckland Bot Soc to visit the North Cape area, Richard Parrish for information and personal notes about the island, Steve Benham for his observations of the Murimotu cabbage trees, Dolly Brown of Kaitaia for the historical information from Ratima Petera, and Auckland Bot Soccers for making the visit so enjoyable.

References

Brook, F. J. 1989: Sheet N.I. & N.Z. - North Cape and Three Kings. Geology map of N.Z. 1: 63 360. D.S.I.R., Wellington.

Cameron, E. K., de Lange, P. J., Given, D. R., Johnson, P. N. & Ogle, C. C. 1995: New Zealand Botanical Society Threatened and Local Plant Lists (1995 Revision). *N.Z. Bot. Soc. Newsletter 39:* 15-28.

Cheeseman, T. F. 1896: On the flora of the North Cape District. *Trans. N.Z. Institute 29:* 333-385.

Goulstone, J. F., Mayhill, P. C. & Parrish, G. R. 1993: An illustrated guide to the land mollusca of the Te Paki ecological region, Northland, New Zealand. *Tane 34:* 1-32.

Judd, W. 1996: The clifftop world of the Three Kings. *New Zealand Geographic 29*:26-48.

Parrish, G. R. 1993: Site of Special Biological Interest - Survey Sheet, 29 October 1996. Unpublished. 6pp.

Sherley, G. & Parrish, G. R. 1989: *Placostylus* survey, management and research in Te Paki, Northland. Department of Conservation, Science Research Internal Report No. 61: 1-35.

Taylor, G. A. 1989: A register of northern offshore islands and a management strategy for island resources. Department of Conservation, Northern Regional Technical Report Series No. 13: 1-126.

Wheeler, J. M. 1963: The vegetation of the North Cape Area. *Tane 9:* 63-84.

Wright, A. E. 1979: Flora and vegetation of the Cavalli Islands (except Motukawanui), northern New Zealand. *Tane 25:* 61-100.

Appendix: Vascular flora of Murimotu

Ferns (9)

Adiantum cunninghamii GPA, AK 118396
A. hispidulum AK 118397
Asplenium northlandicum GRP
Asplenium oblongifolium AK 118404

Doodia media AK 118385
Polystichum richardii GPA, AK 118398
Pteris tremula GPA, AK 118388
Lindsaea linearis
Pteridium esculentum

Dicotyledons (74)

Acaena sp. GRP
Apium prostratum s. str. AK 138390, AKU 8357
*Blackstonia perfoliata**
Calystegia sepium
C. tuguriorum AK 118376
Centella uniflora
*Cirsium vulgare**
Coprosma lucida
C. neglecta s. str. AK 224990
C. rhamnoides GRP
Crassula sieberiana
Dichondra repens
Einadia trigonos subsp. *trigonos*
Geniostoma rupestre var. *ligustrifolium*
Gnaphalium audax AK 224166
Haloragis erecta subsp. *erecta*
Kunzea ericoides var. *linearis*
Leptospermum scoparium
Leucopogon fraseri
*Linum trigynum**
*Lotus suaveolens**
*Medicago arabica** AK 224167
*M. nigra** AK 224168
*Modiola caroliniana**
Myrsine australis
Oxalis rubens
Picris burbidgei
*Polycarpon tetraphyllum**
Rhabdothamnus solandri GPA, AK 118379
Sarcocornia quinqueflora
*Silene gallica**
*Solanum linnaeanum**
*S. oleraceus**
*Stellaria media**
*Trifolium dubium**
*T. repens**
*Verbena litoralis** AEW
*Anagallis arvensis s. str.**
*Aster subulatus** GRP
*Brassica napus** AK 224972
C. soldanella
Cassinia leptophylla AK 118374
*Cerastium glomeratum**
*Conyza albida**
Coprosma macrocarpa
C. repens
C. robusta
Cyathodes juniperina
Disphyma australe
*Euphorbia peplus**
Geranium solanderi "coarse hairs"*
Gnaphalium gymnocephalum
*Hypochoeris radicata**
*Leontodon taraxacoides**
Leucopogon fasciculatus
*Linum bienne**
Lobelia anceps GPA, AK 118375
*Lupinus arboreus**
*M. lupulina**
Metrosideros excelsa
Muehlenbeckia complexa AK 118365
*Orobanche minor**
*Parentucellia viscosa**
Pimelea aff. *urvilleana* AK 118366
Pseudognaphalium luteoalbum agg.
*Rumex brownii**
Senecio lautus
Solanum americanum
*Sonchus asper** GRP
Spergularia media
Tetragonia trigyna AK 118377, 224991
*Trifolium glomeratum**
*T. resupinatum**
Wahlenbergia "vernicosa" AK 224164

Monocotyledons (34)

*Agrostis capillaris**
*A. praecox**
Arthropodium cirratum GRP
*Avena barbata**
*Bromus hordeaceus**
Caladenia ?alata
*Aira caryophyllea**
*Anthoxanthum odoratum**
Astelia banksii AK 118631
*Briza minor**
*Bromus willdenowii** AK 224165
Carex testacea

?Chionochloa bromoides GRP
Cortaderia splendens
Cyperus ustulatus AK 118407
Isolepis nodosa
Leptocarpus similis GPA, AK 118470
Microtis unifolia
*P. strigosa**
*Paspalum vaginatum**
*Poa trivialis** AEW
*R. racemosum**
Thelymitra longifolia
Cordyline australis / kaspar
*Cynodon dactylon**
Dichelachne crinita
Lachnagrostis billardierei
*Lolium perenne**
*Parapholis incurva** GRP
*Paspalum dilatatum**
Phormium tenax
Rytidosperma biannulare
*Sporobolus africanus**
*Vulpia bromoides**

* = adventive species
AEW = A.E. Wright field notebook records 16 October 1983; not recorded in 1995
AK = Auckland Museum herbarium voucher number
AKU = Auckland University herbarium voucher number
GPA = G.P. Adams (April 1968) based on herbarium specimens; not recorded in 1995
GRP = G.R. Parrish (October 1993) based on Parrish's Survey Sheet; not recorded in 1995

Gahnia pauciflora and *G. procera*, and a note on *G. lacera*

R. O. Gardner

Responding to my article on *Gahnia setifolia* and *G. xanthocarpa* (Gardner, 1995), a tramper informed me that "she didn't spend her time slogging around in that low-altitude muck" so why didn't I tell her how to distinguish the two smaller gahnias that are common in beech forest and make it into the subalpine zone. Using AK material I have hastened to produce the notes below.

Firstly, some advice on how to examine cutty-grasses. Their leaves twist through 180 ^{o} as they lean away from the culm, so the darker and scabrid surface presented to the sun is actually the blade's outer (abaxial) surface. When using a hand-lens to look at the papillae on the ridged and paler adaxial surface, bend a length of the blade over the forefinger and get as much light from the side as possible. Because the leaves of dried specimens roll up it is usually necessary to cut out a piece and rehydrate it with hot water and detergent. Double-sided sellotape on a microscope slide makes a good dissecting platform.

Gahnia pauciflora Kirk
Mid-green tussocks; leaf sheath c. 6-12 cm long, c. 10 % as long as blade; blade comparatively thin (c. 0.125 mm), the papillae on the adaxial ridges close-spaced, somewhat variable in size, mostly cylindrical-rounded, but the edges and outer face of the ridges with scattered larger whaleback-like projections (just visible at x 15). Spikelets c. 8mm long, dark brown in fruit, the lower glumes exceeded by the upper ones, the 3 innermost glumes obtuse, mucronate or sometimes emarginate; ripe nut brownish orange, c. 6 x 2.5 mm, facets us. flat or slightly concave, dark tip of nut comparatively narrow; endocarp of nut with c. 7 major transverse grooves.

Robust-panicled specimens may be confused with *G. setifolia*, which it resembles generally in the leaf sheath and blade. But the blades are seldom more than 10 mm wide, and the large whaleback-like papillae on the adaxial ridges are not present in *G. setifolia*.