

MOTUREMU ISLAND - KAIPARA HARBOUR

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On a perfect winter's day (19 August 1989), a keen group of Auckland Bot.Socers (the seafaring variety) embarked on a short voyage out into the Kaipara Harbour. Their destination - Moturemu Scenic Reserve - a small island approximately 3 km offshore, and rising to 46 m a.s.l. The boat journey (on a somewhat aged launch, "Pisces II") provided good opportunities to view the mangroves lining the banks of the Hoteo River, and the more distant limits of the Kaipara Harbour. A landing was made on a shell bank jutting out from the island, and with the aid of a ladder and a dingy, most were able to disembark with dry feet. From there we progressed around the northern base of the island, past a small muddy area of mangroves, to a lowish point in the steep surround, where it was possible to scramble up into the vegetation. It was here our trip leader (A.E. Wright) succumbed to a crippling dose of this year's 'flu virus and stayed behind to sleep while the rest of the troops explored the island. In many places the understorey looked depleted and in two places the forest floor had been dug over by Norway rats. They do this to find invertebrates (G.A. Taylor pers. comm.). Grey-faced petrel burrows were frequent on the island: one bird was observed sitting on a large egg and judging from the many freshly discarded egg shells, others must have had chicks.

Further exploration of the island took us up to lunchtime, when most people returned to the fine grove of karaka trees. Others went in search of some sunshine down near the water's edge. Finding a view out from the island was rather difficult in places because of the closed-in canopy. After lunch most people continued exploring the vegetation, and it was most rewarding to find a small but healthy population of kaka beak (Clianthus puniceus) seedlings.

Mid-afternoon found the botanists back on the shell bank awaiting the return of the Pisces II. More skilfull manoeuvres with the dingy and boat ensured nobody was stranded, even though the margin for error was increased by the rapidly lowering tide. All arrived triumphant back at the jetty on the Hoteo River, having enjoyed the day's explorations.

The Ngati-whatua people regard Moturemu as a focal point in their tribal history and it was extensively occupied in prehistoric times (Davidson 1976). The cliffed foreshore of the island forms a natural defense and earthworks are few. The eroding Waitemata sandstone cliffs are predominantly devoid of vegetation.

Although there are some isolated plant records (kaka beak and Cook's scurvey grass) the only botanical account (including a species list) for the island is by Esler (1972). We were fortunate to be accompanied by Marcus Dill and Frank Hudson who have known the island since their youth.

The island is crowned with pohutukawa canopy up to 10 m tall and associated with mahoe and houpara. Locally in the north-west gully karaka dominates. Emergent from the forest canopy are a few planted Eucalyptus trees and exotic conifers. In 1950 the then young and enthusiastic farm forester, M.G. Dill planted these and one puriri (which died) on the island before it was a reserve. The Pinus pinaster and P. radiata are apparently self introduced. We saw a single totara tree c. 45 cm dbh, but totara up to 1 m tall were common. Similarly only 2 tall karo were seen, but karo seedlings were abundant. Only single shrubs were seen of titoki (1 m tall) and taupata (3 m). Puffballs (Calvatia craniformis) were very common under the forest canopy and a basket

fungus was also seen.

At the south-west end of the island the vegetation is shrubby; mainly gorse and tea-tree. This area was poorly explored by us.

At the southern forest margin large dying specimens of woolly nightshade were frequent, and Muehlenbeckia australis was locally common here. On the south-east slopes vines of the deep-pink flowering pea, mile-a-minute (Dipogon lignosus) were locally abundant. This high climbing and smothering weed is a new arrival since Esler's visit.

The kaka beak seedlings found (spotted by sharp-eyed Mark Paterson) were at two localities on the island:

Site 1. - At the top of the sea-cliffs on the south side of the north-eastern point, 4 kaka beak seedlings, less than 10 cm tall, were found within 2 m of each other. The rather open canopy above them was houpara and pohutukawa about 6 m tall, with some mapou and clumps of Astelia banksii. The kaka beak seedlings at the edge of the vegetation on the cliff-top received plenty of light. Adjacent brush wattle seedlings called for careful identification.

Site 2. - On the forested, rather steep mid-slope, north-west facing, some 16 kaka beak seedlings up to 30 cm tall were seen over a c. 20 x 10 m area. The canopy here was houpara with some pohutukawa, 8-10 m tall, and had about a 70% cover. The ground was crumbly and rather bare because the slope was a nesting area for grey-faced petrels. M.G. Dill told us that this was the site of the last large kaka beak patch (c. 10 m across) on the island which was present up to about 1960.

All the kaka beak seedlings were a dull green, similar to the cultivated garden plants. Most seedlings were unbranched and possessed about 3 leaves, the largest was a single curving stem about 40 cm long and 30 cm tall. With more extensive searching, more plants would probably be found as there appeared to be suitable sites (ledges and crumbly slopes) not searched by us.

M.G. Dill gave us a recent history of Moturemu - he first visited the island in 1930 (as a 10 year old!) when the trig area consisted of burnt standing manuka. It was later burnt again. About 1936-37 most of the island was covered in impenetrable manuka. It was then a major roost for tens of thousands of starlings for the next 40 years or so (though not evident now). When they fouled an area they would shift leaving dead vegetation; these areas were later re-colonised by Muehlenbeckia australis. Pohutukawa emerged through the manuka in the 1940s. In the 1950s whau was locally common and kaka beak was very much alive. In 1972 and more recently no kaka beak could be found. Why then has it reappeared? In good years kaka beak is capable of large seed production and the most simple explanation is that it has existed as dormant seed in the soil seed bank waiting for the right conditions to germinate. Or perhaps seed germinates each year only to be uprooted/eaten by the Norway rats, possibly this destruction is aided by the nesting petrels and/or summer desiccation. Our August visit preceded these possibilities and the seedlings could yet disappear.

On such a small isolated island (c. 5 ha) with high conservation values, rat eradication is strongly desirable. It would also be good to eradicate the mile-a-minute vine but it may be too late for this to be easily feasible. The kaka beak seedlings should be monitored and some cuttings brought back to cultivate. Willie Shaw of the Forest Research Institute, Rotorua, who is presently studying kaka beak is keen to investigate the Moturemu plants. Possibly one day the question whether the Moturemu kaka beak is natural or a Maori introduction may be

answered.

ACKNOWLEDGEMENTS

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REFERENCES

- Davidson, J. 1976 Moturemu Island: Kaipara Harbour. File note, Auckland Office, Department of Conservation.
Esler, A.E. 1972 Moturemu Island Scenic Reserve. Unpublished report.

APPENDIX

Vascular plant species list for Moturemu Island

- E = recorded only by Esler (1972)
M = recorded only from scraps collected by I. McFadden (30.xi.1988) and identified by A.E. Wright
* = new record for the island
** = recorded only from McFadden scraps and ABS
AKU = University of Auckland herbarium voucher number
R. McKenzie = this record was between 1953-65 (Dept. of Conservation files) and now appears to be extinct on the island
no symbol = recorded by Esler (1972) and ABS

Ferns (22)

- | | |
|------------------------------|----------------------------------|
| Adiantum cunninghamii * | Doodia media |
| A. hispidulum | Histiopteris incisa M |
| Asplenium flaccidum s.s. | Lastreopsis glabella * AKU 21809 |
| A. oblongifolium | L. microsora * AKU 21810 |
| A. polyodon | Paesia scaberula |
| Blechnum chambersii * | Pellaea rotundifolia |
| B. filiforme * | Phymatosorus diversifolius ** |
| B. sp. (B. capense of Allan) | P. scandens |
| Cyathea dealbata | Pteridium esculentum |
| C. medullaris | Pteris tremula |
| Diplazium australe * | Pyrrosia eleagnifolia |

Gymnosperms (7)

- | | |
|-----------------------------------|-----------------------------|
| Cupressus macrocarpa (x1 planted) | Pinus pinaster |
| Dacrycarpus dacrydioides | P. radiata |
| Phyllocladus trichomanoides E | Podocarpus totara AKU 21812 |
| Pinus muricata (x8 planted) | |

Dicotyledons (85)

- | | |
|-------------------------|----------------------------------|
| Alectryon excelsus * | ?Lagenifera pumila * |
| Anagallis arvensis E | Lepidium oleraceum (R. McKenzie) |
| ?Aster subulatus M | Leptospermum scoparium |
| Avicennia marina | Leucopogon fasciculatus |
| Brachyglottis repanda E | L. fraseri E |
| Carmichaelia aligera | Ligustrum sinense |
| Cerastium glomeratum * | Lotus suaveolens E |
| Cirsium vulgare | Lycium ferocissimum |

Clianthus puniceus (not seen by Esler (1972))
Conyza albida *Melicope ternata* **
Coprosma areolata *Meliccytus ramiflorus*
C. lucida *Metrosideros excelsa*
C. macrocarpa *Muehlenbeckia australis*
C. macrocarpa x *C. propinqua* * *Myrsine australis*
C. repens *
C. repens x *C. rhamnoides* * AKU 21808
C. rhamnoides *Olearia furfuracea*
C. robusta * *Paraserianthes lophantha*
Coriaria arborea E *Parsonsia* sp. *
Corynocarpus laevigatus *Physalis peruviana* *
Cotula australis * *Phytolacca octandra*
Crepis capillaris E *Pimelea prostrata* agg.
Dichondra repens * *Pittosporum crassifolium*
Dipogon lignosus ** AKU 21807 *P. tenuifolium* E
Drosera peltata E *Pomaderris ericifolia* E
Duchesnea indica * *Pseudopanax arboreus* E
Entelea arborescens *P. crassifolius*
Eucalyptus botryoides (x2 planted) *P. crassifolius* x *P. lessonii*
E. pilularis (x1 planted) *P. lessonii*
E. saligna (x2 planted) * *Racosperma longifolium*
Euphorbia pepplus E *Rubus fruticosus* agg. E
Galium aparine * *Rumex obtusifolius* E
Gaultheria antipoda E *Senecio bipinnatisectus*
Geniostoma rupestre *S. biserratus* E
Gnaphalium gymnocephalum * *S. hispidulus*
G. sphaericum E *S. lautus*
Gonocarpus incanus E *Solanum americanum* **
Hakea sericea E *S. mauritianum*
Haloragis erecta *Sonchus oleraceus*
Hebe macrocarpa *Sophora microphylla* E
H. stricta *Trifolium dubium* E
Hedera helix E *Ulex europaeus*
Hypochoeris radicata *Vicia sativa* E
Knightia excelsa (1 small plant, now extinct? M. Doll pers.comm.)
Kunzea ericoides AKU 21811

Monocotyledons (33)

Acianthus sinclairii * *Holcus lanatus* E
Aira caryophylla *Isolepis nodosa*
Anthoxanthum odoratum E *Microlaena stipoides* *
Carex lambertiana E *Microtis unifolia* E
C. spinirostris *Morelotia affinis*
CollospERMUM hastatum E *Oplismenus imbecillis*
Cordyline australis *Parapholis incurva* E
C. banksii *Paspalum dilatatum* E
C. pumilio *Phormium tenax*
Cortaderia jubata/selloana ** *Poa anceps*
C. splendens *P. annua* *
Dactylis glomerata E *Rhopalostylis sapida*
Dianella nigra *Ripogonum scandens*
Dichelachne crinita *Rytidosperma biannulare* **
Festuca arundinacea E *Thelymitra longifolia* **
Gahnia lacera *Vulpia bromoides* E
G. setifolia E

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