Acknowledgments

I am grateful to the NZ Lottery Board who supported the fieldwork for this study, to Jack Craw, Ewen Cameron and Brent Maxwell for information, and to Mairie Fromont and Steven King for allowing me to cite their unpublished report.

References

Fromont, M. and King, S. 1992: Characteristics and Control Methods of 30 Weed Species Affecting Conservation Land in Northland" Unpublished report to Northland Conservancy, Department of Conservation.

Holm, L. G., Plucknett, D.L., Pancho, J.V., and Herberger, J. P. 1977: *The World's Worst Weeds* University of Hawaii Press, Honolulu.

Mathur, G. & Ram, H. Y. 1986: Floral Biology and Pollination of *Lantana camara. Phytomorphology 36*; 79-100.

Parsons, W. T. 1992: *Noxious Weeds of Australia.* Inkata Press.

Smith, L. S. & Smith, D.A. 1982: *Queensland Botany Bull. 1*:1-26

Thamann, R. R. 1974: *Lantana camara*: its introduction, dispersal and impact on Islands of the Tropical Pacific Ocean. *Micronesica 10*: 17-39.

Webb, C.J., Sykes, W.R. & Garnock-Jones, P.J. 1988: *Flora of New Zealand Vol. IV.* DSIR, Christchurch.

Tropical seeds found on Rangatira Beach, north-west Auckland

Barbara Waller

On two occasions in recent years I have found tropical seeds on Rangatira Beach about 26 miles north of Muriwai.

The first found was a candlenut seed (*Aleurites moluccana*). It was in the general flotsam above high water mark. That was three to four years ago. In appearance it is almost heart shaped with one flat side, the other raised and roughened. The colour is dark purple-black and in size approximately 1.0 x 1.25 cm.

On 6 November 1994 I noticed the thin edge of a reddish object in the dune a few metres north of the 26 mile cut-out. The dune was about 4 metres high and the seed was about 1.5 m from the base of the dune. The object was in isolation and not associated with a layer of buried flotsam as is sometimes seen in the eroding dune faces. Once it was removed I realised it was a seed and not one I had seen before. Ewen Cameron identified it as a seed of the tropical plant *Entada phaseoloides*. In appearance it is dark reddish brown, approximately 1.5 x 2.25 cm, almost rectangular in shape and raised towards the centre of each side. *Entada* is a large climbing vine with enormous pods 1 m long or more.

The dunes are currently being rapidly eroded and the part of the dune where the *Entada* seed was found had disappeared a week later.

I wonder if this area being south of the Kaipara Harbour entrance and away from the immediate influence of the bar is a good landing place for widely travelled articles. Or is it purely fortuitous? I have to acknowledge that from there north is the part of the beach I know best. Interestingly our son found a drift card from South African waters in the same vicinity a few years ago. Although both of these seeds have been collected on North Island beaches before, e.g. Ninety Mile Beach (Mason, 1961), I wonder if they have ever been found further south than Rangatira Beach?

Acknowledgment

I thank Ewen Cameron for useful comments on the draft of this note and for identifying the *Entada* seed.

Reference

Mason, R. 1961: Dispersal of tropical seeds by ocean currents. *Nature 191*: 408-409.

Waipareira Bay, Upper Waitemata Harbour

Marjorie Cutting and Ewen Cameron

Waipareira Bay (grid reference: R11 570866) is on the western side of the Upper Waitemata Harbour, just north of the Te Atatu North Peninsula, Auckland. Westpark Marina encloses the bay to the north. We visited the area on the request of Waitakere City Council staff on the 18 May 1994, to assess the botanical values of an inlet on the southern edge of the bay. (Scientific names for all plant species seen are listed in the appendix.)

This particular area has suffered considerable environmental damage as a result of a bund failure which occured during the construction of the Westpark Marina in the early 1980s. Approximately 8000 cubic metres of silt flowed into the bay, followed by a period of leachate exposure from rotting vegetation under the construction area. Spoil from the marina construction was also dumped into the bay. Prior to these incidents the inlet supported a mangrove shrubland with small areas of saline marsh and coastal shrubland around the coastal margin. Photos (held by ARC Environment) taken around this time indicate that the coastal cliffs had already been substantially modified, and were primarily covered with gorse, although they probably supported young kanuka and manuka as well.

Nearly ten years later the inlet has become a freshwater wetland as a result of the sediment deposition described above, and probably also from the subsequent urbanisation of the catchment. This wetland is now one of few freshwater wetlands found in the Waitakere City's part of Tamaki Ecological District (K. Denyer pers. comm., 1994). Mangrove shrubland and sea rush marsh have re-established on the new seaward edge of the inlet. Some of the original salt marsh has remained intact on the margins of the inlet. During the last few years the coastal cliff vegetation has grown in height, and gained a higher species diversity.

For the purpose of this description we have broadly divided the inlet into four areas. These are:- the coastal cliff line; freshwater wetland; saline wetland; and the rock bund of the marina (see Figure 1). The entire area has a vascular plant species diversity of 91 of which 45 species are adventive (lower plants were not recorded). The area is about 5 hectares in size.

Coastal cliff vegetation

The more exposed coastal cliff line as it runs from the point of the bay (marked by a *Pinus radiata* tree) along to Luckens Reserve is composed of Waitemata Sandstone with small 'sandy' areas along the coastal margin. Along the coastal cliffs a remnant gumland vegetation association occurs represented by kumerahou (as small trees and seedlings), *Lepidosperma laterale*, manuka and gorse. A few taupata seedlings were also found. While gorse is still predominant, native species are regenerating throughout.

The coastal cliff vegetation extends into the bay itself. In a small indentation in the cliffs the species diversity increases with mapou, gorse, mamaku, *Coprosma robusta*, kumerahou, hangehange, manuka, woolly nightshade apparent in the canopy. We also found a small area of Japanese honeysuckle. At this point also on the coastal margin several bushes of shore ribbonwood occurred behind bands of saline rushes, sedges and grasses. This tall shrubland on the coastal cliff extends