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QUATERNARY PALYNOLOGY ON MANA ISLAND

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Mana Island, on the Kapiti Coast, Wellington, has recently become a scientific reserve after 150 years of European pastoral farming. A palynology study was undertaken, supported by the Department of Conservation, with the primary objective of determining the vegetation and fire histories of Mana Island over the last 2000 years. From this I hoped to be able to determine the undisturbed pre-settlement vegetation on the island and to date first human settlement as revealed by vegetation disturbance. It was hoped that this would provide information which would assist with the revegetation programme currently being undertaken, and with reconstructing the prehistory and history of Mana Island as an aid to public education programmes.

Two pollen sequences were analysed from a former wetland close to the area which would have been suitable for Polynesian Maori horticulture and where evidence for Maori occupation is concentrated. This is also close to the midden which Michelle Horwood intends excavating. Pollen samples were also collected from a ditch and bank enclosure, thought to have been a type of fencing used by Europeans to exclude stock from gardens dating to the period 1830-1880 (Jones 1987), because of the enclosure's archaeological significance and to provide a comparison for the wetland sequences. Surface pollen samples were collected to assist with the interpretation of the pollen sequences.

Pollen analytical results show that a manuka/kanuka-dominant (*Leptospermum/Kunzea*) scrub, similar to that of the existing forest remnant on the island, was widespread on the island prior to the present grassland: a radiocarbon date at the base of the sequence indicates that this scrub existed at 560±160 years BP. Low frequencies of microscopic charcoal fragments at this level suggest that the manuka/kanuka scrub preceded prehistoric Polynesian settlement of the island. However since settlement of parts of New Zealand occurred perhaps 1000 years ago, the scrub may be the result of human interference prior to 560 years BP; to examine this possibility the pollen sequence would have to be extended back another 500 years.

At the time of construction of the ditch and bank enclosure the kanuka/manuka scrub had probably been cleared in the vicinity of the enclosure and a local grassland created. Pollen percentages from the upper topsoil reflect more

extensive grassland, as seen currently. The abundance of grasses (Gramineae) in all horizons suggests that European settlement had occurred prior to the construction of the ditch and bank enclosure. In addition, increased abundance of such pollen types as Compositae (Liguliflorae), which include introduced species, from the original topsoil upwards may be the result of European farming. The appearance of pine (*Pinus*) in the thrown material, dates this horizon to post-European settlement and is further evidence that the ditch and bank enclosure was constructed during European times, in the period when a nearby lighthouse was in use, 1865-1880, some 33 years after European farming began on the island.

A detailed report on this work will be published in the Science and Research Series of the Department of Conservation, Wellington. A shorter more digestible version of the report will be published in the first volume of papers presented at the Ecological Restoration of New Zealand Islands conference held in Auckland, November 1989.

Reference

Jones, K. 1987. Early gardening on Mana Island, Cook Strait, New Zealand. New Zealand Geographer 43:18-22.