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The Radiocarbon Chronology of the Norfolk Island Archaeological Sites

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ABSTRACT. Radiocarbon determinations were obtained for archaeological sites at Cemetery Bay and Emily Bay, Norfolk Island. Sample materials were rat bone gelatin, marine shell and wood charcoal. Ages on bone gelatin are contradictory and suggest a laboratory problem, while ages on marine shell appear to include an old-carbon offset of 500–600 years: dates on these samples are consistent with those on charcoal when appropriate corrections are made. Ages on charcoal were divided according to the expected inbuilt age of the sample taxa. The samples with lowest inbuilt age were subjected to Bayesian analysis which concluded that the main archaeological site, at Emily Bay, had been occupied from the early thirteenth to the early fifteenth centuries A.D. The Norfolk Island settlement occurs within the same age range as other Polynesian settlements of southern islands.

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Radiocarbon determinations have been obtained from two archaeological sites on Norfolk Island: Cemetery Bay and Emily Bay. In both cases, multiple sample types were dated. Each type of sample is associated with different issues of processing and interpretation so we consider them first in these categories. Following that, we discuss the chronologies in their stratigraphic and spatial contexts and then consider the age of prehistoric settlement on Norfolk Island generally and in relation to the prehistoric chronologies of archipelagos which might have contributed colonists.

Charcoal identification

The first results from Norfolk Island (Rich *et al*., 1983: 17) were on unidentified charcoal (I-11019, I-11303, Table 6) from excavations at Cemetery Bay. Additional excavations there by Meredith (1985: 22) added two samples (Beta-6821, Beta-6822) comprising pieces from "small branches" (3–4 cm diameter) of gymnosperm, almost certainly Norfolk pine (*Araucaria heterophylla*). It is not clear how branchwood was identified (deduction from the curvature