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RADIOCARBON DATES FROM THE MOA-HUNTER SITE OF
PAPATOWAI, OTAGO, NEW ZEALAND.

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The following radiocarbon dates have recently been obtained from a small excavation (T11) on the main occupied terrace of Papatowai Point.

NZ No	Old $\frac{1}{2}$ life	Secular correction	Provenance
4272	580 \pm 60	610 \pm 60	Oven 1 from upper layer
4271	580 \pm 60	610 \pm 60	Oven 2 from upper layer
4270	560 \pm 60	590 \pm 60	Shell lens in upper layer
4269	660 \pm 60	670 \pm 60	Middle layer
4268	760 \pm 60	740 \pm 60	Bottom layer
4267	850 \pm 70	830 \pm 70	Bottom layer
1332	910 \pm 80	860 \pm 80	Bottom layer
1333	300 \pm 40		Bottom layer

All the samples were charcoal except for the anomalous one, NZ 1333, which consisted of pipi Paphies australe shell. X-ray diffraction showed the crystal structure of the shells to be aragonite which should have contained only the carbon incorporated during growth. There are no obvious stratigraphical or logistical reasons why the shell date should have been so young. Otherwise the chronology of the dates agrees with the stratigraphic order.

Dates previously published for Papatowai (Fergusson and Rafter 1959: 743) include some bone carbonate dates of 460-310 B.P. for the upper two layers (NZ137-140). On the basis of these dates and from ages of trees growing on the site, Lockerbie (1959) proposed that Papatowai was occupied until about 1700 A.D. However this new series of charcoal dates suggests that the major occupation may have ceased by 1400 A.D. It is relatively easy to throw doubt on the carbonate dates NZ137-140 since it is now known (Polach 1971) that bone carbonate can equilibrate isotopically with soil carbonate in a well-drained sandy matrix such as that of the Papatowai middens. These carbonate dates are likely to be too young.

In fact another determination done on the fixed carbon of the moa bone of sample NZ137 gave a date of 640 ± 60 B.P. (R.C. McGill 1977: pers. comm.), nearly 200 years older than the carbonate date of 460 ± 50 B.P.

It is unusual for a New Zealand site to be occupied for more than a few centuries and a shorter time span for the occupation of Papatowai would be more consistent with other New Zealand prehistoric sites.

REFERENCES

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