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NOTES AND COMMENTS

RADIOCARBON DATES FROM TWO COASTAL SITES IN THE MANU'A GROUP, AMERICAN SAMOA

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Samples of inshore marine shell species (various taxa, see description below) were collected from controlled excavation of ceramic-bearing strata of two archaeologic sites in the Manu'a Island group, American Samoa. Located on the closely adjacent islands of Ta'u and Ofu (14° 14′ 30″ S, 169° 30′ 40″ E and 14° 10′ 55″ S, 169° 39′ 0″ E, respectively), these sites represent human occupation along shorelines undergoing a parallel depositional sequence of calcareous sand dune development and concomitant seaward progradation. Our primary objective was to obtain an initial age estimate for prehistoric ceramics from eastern Samoa. On stylistic and technologic criteria, the ceramics recovered from our excavations can be classified as thick-coarse Polynesian Plainware. Based on previous studies in Western Samoa, Polynesian Plainware represents a terminal phase of prehistoric pottery manufacture in the Samoan Islands, believed to date from ca 200 BC to AD 300 (Green & Davidson, 1974).

The samples selected for radiocarbon analysis were collected from secure stratigraphic context associated with pottery, flaked basalt tools, and food remains represented by bone and artificially fractured marine shell (primarily gastropods). There were no indications of post-depositional disturbance or other factors that might render the shell samples non-contemporaneous with other cultural contents of the strata from which they were collected (Hunt & Kirch, in press).

^{14}C measurements were made by Beta Analytic, Inc (see below) who report pretreatment of the outer layers of the shell with dilute acid. The benzene syntheses and counting proceeded normally. The $^{13}C/^{12}C$ ratio was measured to establish a ^{13}C adjusted age. Corrections for specific ^{14}C activity, and for the reservoir effect (Stuiver & Polach, 1977), taking into account regional ocean variation (Delta-R estimates), as well as calibration for secular effects were made following the recent work of Stuiver, Pearson and Braziunas (1986). These calibrations were made using a FORTRAN program on a floppy disk provided to the authors by M Stuiver and P Reimer (Stuiver & Reimer, 1986).

The radiocarbon significance of these age estimates from marine shell is their close contemporaneity with corrected (after Stuiver & Becker, 1986) radiocarbon assays of wood charcoal associated with stylistically and technologically similar ceramic assemblages from Upolu Island in Western Samoa (Green & Davidson, 1974, p 214–217; see Fig 1). Thus, corrected shell estimates and those of wood charcoal are, on comparative archaeologic evidence, closely comparable in calibrated age (AD/BC). This demonstration of comparability in ^{14}C ages determined on marine shell and wood charcoal samples is especially noteworthy in light of the skepticism with

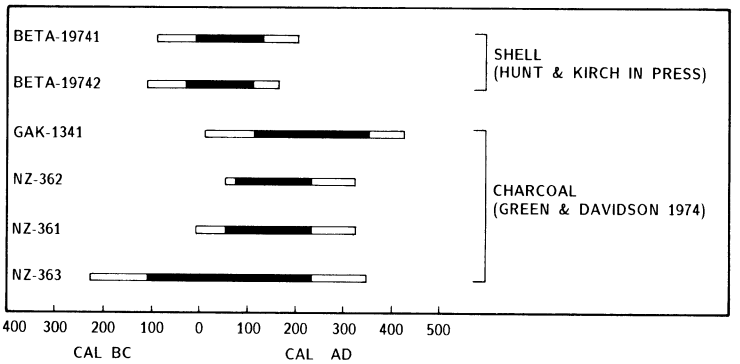

Fig 1. Calibrated age ranges (1 & 2 sd) of marine shell samples from the Manu'a Group, American Samoa compared with calibrated dates (1 & 2 sd) of wood charcoal samples from Upolu Island, Western Samoa. The age estimates are stratigraphically associated with stylistically and technologically near-identical ceramic assemblages of thick-coarse Polynesian Plainware.

which some Pacific archaeologists have viewed ^{14}C ages on marine shell samples.

In sum, marine shell samples from archaeologic contexts in the Samoan Islands have been demonstrated to yield ^{14}C ages that closely agree with associated results from wood charcoal.

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ARCHAEOLOGIC SAMPLES

Beta-19741. Ta'u Island **2330 ± 50**
$\delta^{13}C = +2.6‰$

Marine shell (*Trochus* sp, *Cypraea* spp, *Conus* sp, *Drupa* cf *ricinus*, Cymatiidae and Mitridae) from Site AS-11-51, Unit 1, Layer D, Level 6 in an organically-enriched midden of calcareous sand matrix; thick-coarse pottery abundant. ^{14}C age (^{13}C adjusted) years BP 1880 ± 50; cal AD range 0 (70) 128 at 1σ; cal BP range 1950 (1880) 1822 at 1σ.

Beta-19742. Ofu Island **2350 ± 50**
$\delta^{13}C = +2.9‰$

Marine shell (*Turbo* sp) from Site AS-13-1, Unit 1, Layer D, Level 10 in an organically-enriched midden of calcareous sand matrix; thick-coarse pottery present (not abundant). ^{14}C age yr BP 1890 ± 50; cal 28 BC (cal AD 45) 108 at 1σ; cal BP 1977 (1905) 1842 at 1σ.

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