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BIOLOGICAL AFFINITY OF A PREHISTORIC COOK ISLAND POPULATION: THE
DENTAL AND GENETIC EVIDENCE

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Abstract

At least 41 males and females, ranging in age from newborn to adult, were dismembered, cooked, and possibly eaten on Mangaia, Cook Islands. The remains of these individuals were found at Ana-Manuku rockshelter, a pre-European-contact archaeological site radiocarbon dated to between AD 1390 and 1470. This site is unique on the island and elsewhere in Polynesia— it contains an assemblage of burned and fragmentary human bones and teeth and lacks the artifacts and faunal assemblages typical of habitation sites in the area. In order to better understand what occurred at this Mangaian rockshelter site and why, this study aims to determine the biological identity of the individuals from the site. Their identity is explored by documenting and analyzing dental patterns and mitochondrial DNA signatures from the remains. Because of small sample size, it was difficult to determine biological affinities based on dental morphology or metrics. Of the five mitochondrial sequences that were successfully sequenced from the site, four are difficult to distinguish from the control sequences of individuals who handled the bones. One individual, however, exhibits a motif of substitutions that matches no control sequence and looks strikingly Melanesian in origin. While a more complete investigation of all individuals who handled the bones, as well as of additional MAN-84 specimens, is required before any conclusions can be made, these preliminary results suggest that the individuals from this Mangaian archeological site belonged to a minority lineage group in Polynesia that experienced gene flow with coastal Melanesians during migration into Polynesia.