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The Lapita-associated Human Material from Lakeba, Fiji

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ABSTRACT. The remains of an individual interred about the middle of the first millenium BC, in association with Lapita ceramics, on the island of Lakeba in the Lau group of Fiji, have been examined. The long bones were robust and showed marked bowing and other evidence of considerable muscularity. The femur had an oval fovea and marked platymeria (index 71). Stature was estimated at 1,715 mm. The incomplete jaw was of 'rocker' form on one side and showed a very slight antegonial notch on the other. The morphology of this individual is fully compatible with the known Polynesian skeletal phenotype.

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Human remains associated with typical Lapita ceramics have been excavated on the island of Lakeba in the Lau group of Fiji (Best, 1984). The material was greatly fragmented, but a useful assessment of phenotypic affinities was possible for one individual (from Site 196: trench 28). Carbon-14 dates for the initial occupation of the site early in the first millenium BC indicate interment towards the middle of that interval (Best, 1984: 100–105).

Material

The remains were of an adult male, probably in the fourth decade of life (30 to 40 years). The long bones were robust (though a defined robusticity index was not obtainable) and with physiologically bowed shafts to accommodate a considerable musculature. The maximum length of the intact right radius was 245 mm, and of the right ulna 266 mm. Derived stature estimates using different equations are given in Table 1. The Polynesian equations of Houghton *et al.* (1975) gave the mid-estimates and also the least range; a stature of 1,715 mm is suggested. The upper femoral shafts were markedly flattened with a platymeric index of 71, rather greater than that found in the prehistoric Maori (Schofield, 1959) but similar to prehistoric Hawaii (Snow, 1974). The femoral heads showed distinct oval foveae (Fig.2). The forearm bones showed the marked bowing characteristic of Polynesians and the humeri showed prominent deltoid tuberosities. The spine was represented by several vertebrae from neck to lumbar region. It showed very little degeneration compared with prehistoric New Zealanders of the same age, where lumbar and cervical degeneration are often very advanced by the mid-30s. Clavicles show first-rib grooves, right more than left, suggesting regular canoe paddling. The right upper limb bones are slightly more robust than the left and this individual was thus presumably right-handed.

The cranial fragments offered little information, but the mandibular body and about half of each ramus were present. This bone was not particularly robust, though function would have been influenced by extensive dental caries in both jaws. The mandible verged on the rocker form, the right side displaying no antegonial notch and

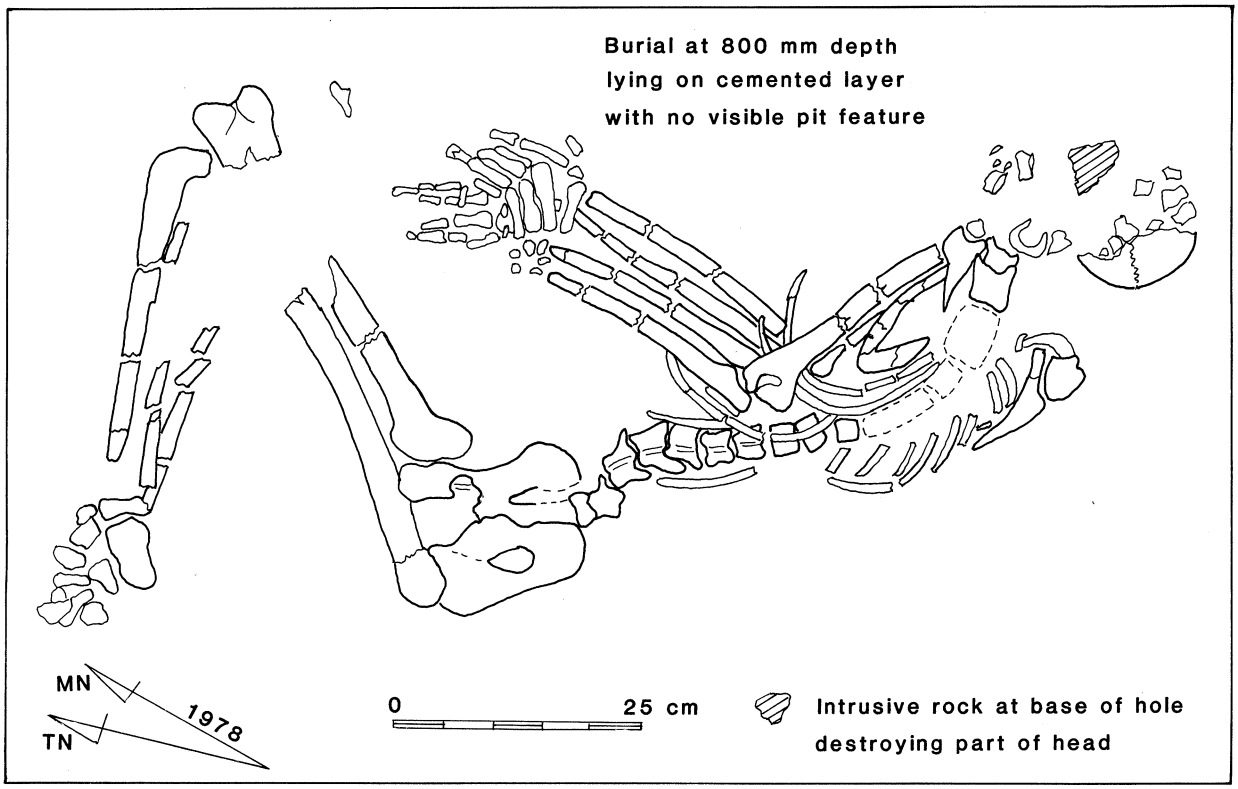

Fig.1. Burial at 800 mm depth resting on a cemented layer of grey-orange sand, Trench 28, Site 101/7/196, Wakea, Lakeba, Lau Group, Fiji (from Best, 1984).

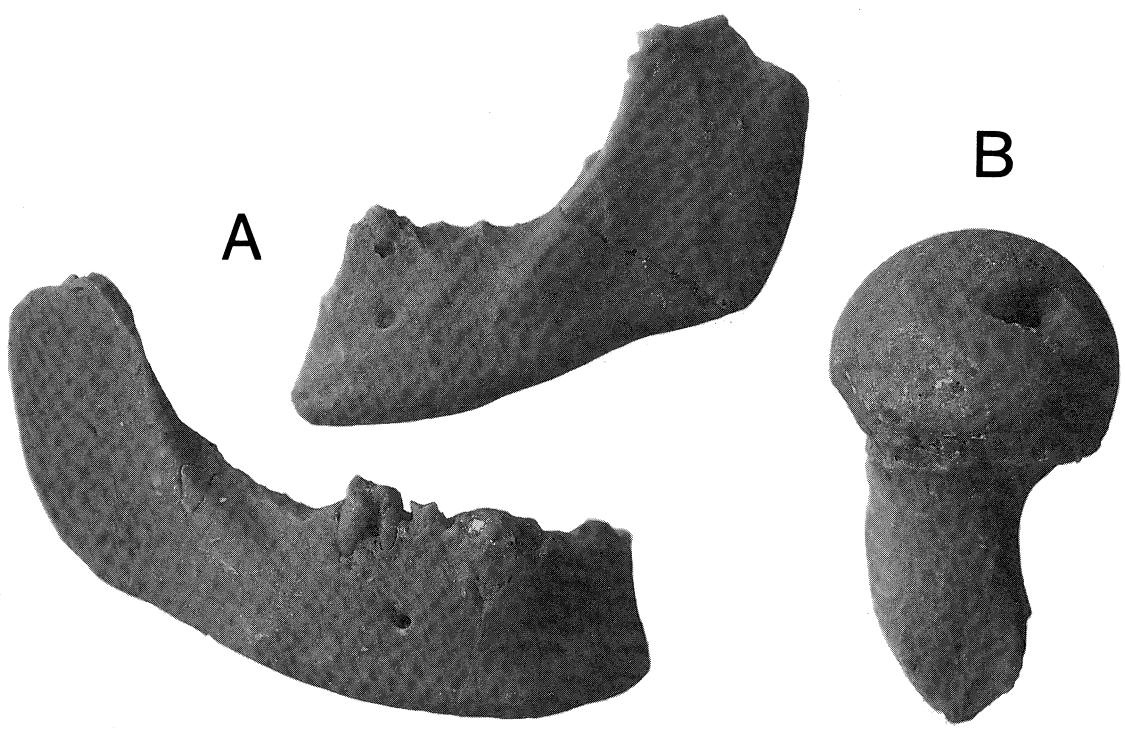

Fig.2. Casts of: a. right and left mandibular fragments; the antegonial notch is absent on the right side and minimal on the left. b. femoral head showing the oval fovea.

Table 1. Stature estimates in millimetres from maximum lengths of right radius and right ulna using equations derived from Polynesian (Houghton *et al.*, 1975), White American (Trotter, 1970), and Mongoloid (Trotter, 1970) body proportions.

	Mongoloid	Polynesian	White American
radius 245 mm	1687	1711	1720
ulna 26mm	1700	1716	1735

the biological significance of this feature see Houghton & Kean, 1987).

Some features of the dentition were preserved. The lower third molars were congenitally absent and it could be ascertained that the upper left third molar had erupted. An upper central incisor showed moderate shovelling both lingually and labially, while a lateral incisor showed a trace of shovelling. A lower second molar showed a five-cusped, Y-fissure morphology. Five upper and nine lower teeth could be measured (Table 2).

Table 2. Tooth dimensions in millimetres. The teeth are defined according to the FDI system.

Tooth	mesiodistal	buccolingual
11	8.6	8.3
12	6.5	6.9
13	8.4	9.2
23	8.5	9.0
27	10.5	11.7
31	5.7	6.9
32	5.9	6.8
33	7.5	8.0
34	8.4	9.0
37	12.1	10.8
41	5.7	6.8
42	6.0	7.0
43	7.4	8.5
44	8.1	9.1

This array of skeletal features, and the stature estimate, are distinctively Polynesian. Indeed, the femur takes the more extreme morphology of eastern Polynesia. I have tended to think of the latter as arising by succesive processes of genetic drift and reduction of the gene pool with eastward migration across Polynesia, but there is evidence here that the form was established earlier in the west. Like the bowing of the long bones it may be an indicator of a substantial thigh musculature and thus a large lean body mass. These are characteristics in harmony with the oceanic environment and Bergmann's Law (Houghton, in press).

I do not think the limited dental data merit comparative statistical analysis. The aplastic third molars and incisal shovelling accord with Polynesian morphology (e.g. Snow, 1974, Suzuki & Sakai, 1964).

These remains were subsequently returned to Lakeba for reburial. Casts were made of the dentition and mandibular and femoral fragments, and are retained in the Department of Anatomy, University of Otago.

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