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– ARTICLE –

Early Polynesian Mortuary Behaviour at the Talasiu Site, Kingdom of Tonga

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ABSTRACT

This paper describes a well-preserved and burned human bone assemblage that represent at least four individuals dating to *ca*. 2400–2600 years ago from Tongatapu Island in the Kingdom of Tonga. The remains are the oldest securely dated skeletal assemblage from Polynesia, and they shed light on the early mortuary behavior at the end of the Lapita era when Ancestral Polynesian Society (APS) is thought to have emerged.

Keywords: Pacific Islands, Ancestral Polynesian Society, mortuary practice, cremation, Lapita

INTRODUCTION

The major landmasses of Remote Oceania (southeast Solomons to Samoa) were first colonized between 3350 BP and 2800 BP by human groups of the Lapita cultural complex (Summerhayes 2007; Clark & Anderson 2009). Lapita groups in Fiji-West Polynesia were probably ancestral to the emerging Polynesian societies on Tonga, Samoa and the adjacent islands of Futuna and 'Uvea, who, more than a millennia later, colonized the dispersed and tiny landmasses (with the exception of New Zealand) of east Polynesia (Kirch 1984; Kirch & Green 2001, but see Addison & Matisoo-Smith 2010). The Ancestral Polynesian Societies (APS) of West Polynesia are associated with archaeological assemblages consisting of utilitarian plainware ceramics ('Polynesian Plainware'), which have an estimated age of 2600–1600 BP (Burley 1998; Burley *et al*. 2011; Connaughton 2007; Rieth & Hunt 2008), and in historical linguistics with a Proto-Polynesian (PPN) lexicon (Green 1986; Kirch 1984, 2010).

Identifying the emergence of APS is difficult as the Polynesian Plainware phase spans 800–1000 years and many perishable items of material culture have not survived in the archaeological record. In addition, because the Proto-Polynesian lexicon represents the point at which the subgroup broke apart it is acknowledged that the archaeological and linguistic data sets for early APS might only partially overlap (Kirch & Green 2001:59; Burley 2007:156). There are also substantial gaps in our knowledge of APS, especially its ritual and ceremonial aspects because the prehistoric record is weighted toward the preservation of mundane/utilitarian remains, particularly items associated with subsistence. The Proto-Polynesian lexicon provides terms relating to several non-secular behaviours and activities, but it does not specify how these were combined in distinctive ways by Ancestral Polynesian Societies. This is particularly the case for mortuary behaviour as noted by Kirch and Green (2001:237): 'There are no extant Ancestral Polynesian temples or shrines, nor do we have funerary remains that might yield clues to ritual practice.'

The notion of an APS concept has been criticized (e.g. Smith 2002), most recently by Addison & Matisoo-Smith (2010) who propose that a migration through Micronesia around 1500 BP contributed to the genesis of Polynesian society, but the hypothesis is disputed (Davidson 2012). We report a deposit of burned and unburned human bone that represents the oldest skeletal assemblage from Polynesia that dates to the period when APS is thought to have emerged. The remains of four individuals from the Talasiu site on Tongatapu Island date to *ca*. 2400–2600 calBP. Shell artifacts were placed with the human remains and a round fence or small structure was used to demarcate the interment. Reconstruction of the Talasiu mortuary behaviour and comparison with funerary processes during the Lapita-era (*ca*. 3000–2500 BP) in the Western Pacific and post-Lapita contexts in Tonga does not disclose similar treatment of the deceased. As these human remains currently stand as the only well-documented example of early mortuary activity in West Polynesia we are unable to generalize about the variability of early funerary practices. Nonetheless, the Talasiu remains suggest that early societies in Tonga had mortuary behaviours that were not transmitted to descendent cultural traditions.

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Mortuary features at Talasiu

The Talasiu site is located to the north of Lapaha where the central place and monuments of the Tu'i Tonga chiefdom are located (Clark *et al.* 2008). Human remains were seen in a midden deposit containing abundant pottery and marine shell that was exposed in a road cutting at the south end of Talasiu village (Figures 1 and 2). The midden deposit site was listed as TO-Mu-2 by Spennemann (1986) who recorded midden along 100 m of the old shoreline (Figure 2), and an area immediately south of where the human remains were found was excavated by Golson in 1957 who did not locate any human bone (Golson, field notes). The area may have been an attractive settlement location in prehistory as it is close to a limestone solution channel which provides a significant source of aquifer freshwater. The road edge where the human bone was exposed was scheduled due to be graded, and an excavation of 1.5 m by 1.5 m called TP.1 was made in 2008 to recover the human remains and to sample the surrounding midden deposit. The excavation was located on the sloped road edge to ensure that all of the human bone was recovered and inspection of the shallow ditch below the exposure did not reveal any remains, although some bones may have eroded out (Figure 2). Spennemann (1986: 38) had surface collected pottery, marine shell and stone tools in addition to 'some human bones' from TO-Mu-2, but he did not specify the location. One fragment of unburnt parietal bone was located in the TO-Mu-2 collection held at the ANU.

As excavation proceeded to 20–25 cm below datum, in TP.1 it was observed that both burned and unburned fragmented human bone was concentrated in a circular area 30–40 cm in diameter surrounded by midden deposit. The simple stratigraphy of the midden deposit surrounding the bone consisted of an upper layer (Layer 1: 0–20/25 cm) of dark grey-brown silty clay with shell and pottery midden remains. Layer 2 extended from 20/25 cm to 60/65 cm of grey-brown clayey soil with dense shellfish and pottery. The basal sediment (Layer 3: 60/65 cm) was a red-brown sticky clay devoid of cultural material except where features such as post holes had penetrated the sediment. Midden material was removed in 5 cm and 10 cm spits with cultural material concentrated between 20 cm and 60 cm depth where the deposit was composed of abundant marine shellfish, pot sherds, charcoal, sparse fauna and a few pieces of obsidian and volcanic stone artifacts. In contrast to the surrounding midden, two large worked *Tridacna* sp. valves and two worked *Conus* sp. shells were associated with the human bone concentration.

The two large *Tridacna* valves vertically defined the human bone concentration that formed a roughly cylindrical deposit 30–40 cm in height containing 2.2 kg of remains. The upper *Tridacna* sp. valve was seen protruding from the road cut with the exterior surface uppermost at

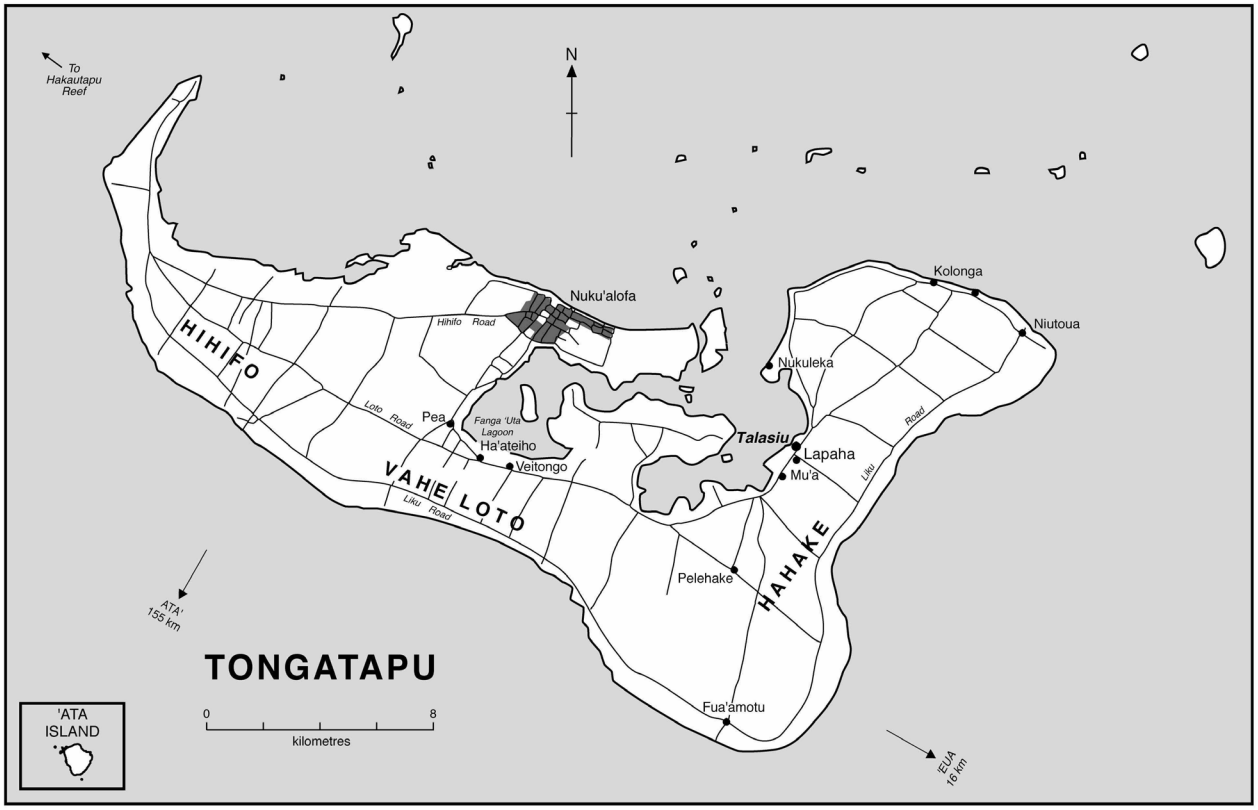

Figure 1. Map of Tongatapu showing location of the Talasiu site.

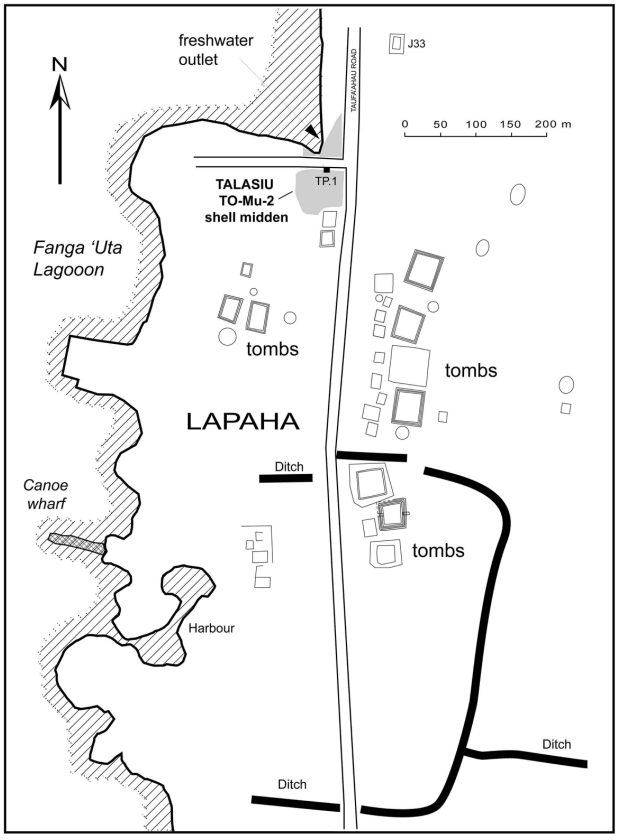

Figure 2. The Talasiu site (TO-Mu-2) on the Fanga 'Uta Lagoon.

about 40–45 cm depth below datum. The dorsal area of the shell (after Kirch & Yen 1982:209–210) was tilted downward probably from settling and compaction of the bone deposit. The base of the bone assemblage lay on the interior surface of a second flaked *Tridacna* valve. The umbo was fixed downward in the Layer 2 sediment with the dorsal edge pointing upward so that the valve formed an L-shaped base 18 cm high on which there were numerous fragments of highly burned and blackened human bone. The lower part of the bone concentration contained more burned bone than the upper part along with a thin lens of ash. The lower *Tridacna* and a worked *Conus* shell found near the top of the concentration at 45 cm depth displayed charring, fissures and cracking consistent with heat exposure (Spennemann 1989b) along with a thick charcoal stained area (6 × 12 cm) between the hinge and the outer point of mantle attachment (pallial line) of the *Tridacna* valve. There was no evidence for *in situ* bone burning at a scale to account for the quantity of burned bone and no evidence of bone articulation. Both suggest secondary deposition of human remains followed by settling and compaction of burned, partially burned and unburned bone along with worked shells and combustion debris.

Cut into the basal Layer 2 sediment were seven features, six of which were post holes. The holes have a depth ranging from 21–31 cm and outline a small circular structure, possibly a fence or hut approximately 1.10 m in diameter (Figure 3). The structure might represent a god house/ritual building (PPN **fale-qatua*). Within the structure there was no surface of coral, limestone or volcanic pebble gravel (PPN **kili-kili*) or beach sand, which are a feature of late prehistoric burials in Tonga (Spennemann 1989a(I):394). The two largest post holes were immediately adjacent to the bone concentration in the northeast of the excavation, and in one of these holes (Feature 6) was 15 g of bone (19 fragments) including a mandibular symphysis, an occipital fragment, and another worked *Conus* shell at 80 cm depth. The mandibular symphysis and occipital fragment fitted with bone elements higher up indicating a single origin for the two assemblages with a few bones deposited into the post hole after post decay. The final feature cut into Layer 2 was an area of dark red oxidized soil around 50 cm in diameter that had been exposed to high temperatures (Feature 7). The extent of this feature cannot be reliably determined as it was truncated to the north by the road cut. There were no fragments of burned bone associated with Feature 7.

Radiocarbon dating

Eight dating samples were processed by the Waikato Radiocarbon Dating Laboratory (WRDL), with six samples sent for AMS analysis at the Institute of Geological and Nuclear Sciences in New Zealand (Table 1). Pretreatment of shell, bone and charcoal samples and preparation of graphite targets was completed at the WRDL with calibra-

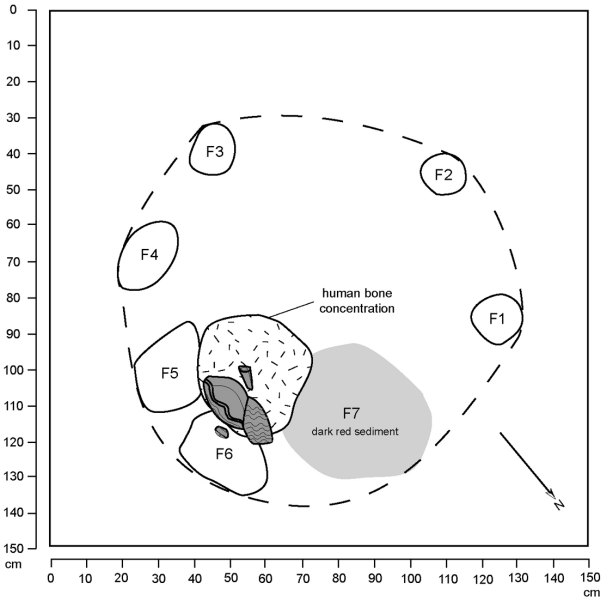

Figure 3. Plan view of Talasiu TP.1 excavation showing the area containing burned human bone and the position of shell artifacts. Features F1–F6 are postholes and F7 is an area that has been exposed to heat.

Table 1. *Talasiu radiocarbon dates.*

Lab No.	Depth below surface	Material	CRA	^{13}C	Calibrated 68.3%
Wk-22999	TP.1:40 cm	*Tridacna* sp.: grave good	2767±37	2.2±0.2	2580–2780
Wk-23000	TP.1:65 cm	*Tridacna* sp.: grave good	2726±30	2.8±0.2	2540–2740
Wk-23001	TP.1:80 cm	*Conus* sp.: grave good	2682±30	3.5±0.2	2490–2700
Wk-25461	TP.1:40–65 cm	Human bone: bone concentration	2499±31	12.2±0.2	2360–2680
Wk-22876	TP.1:91 cm	Charcoal from F6: structure	2452±30	23.5±0.2	2350–2750
Wk-23002	TP.1:80 cm	Charcoal from F5: structure	2562±30	25.0±0.2	2500–2720
Wk-28234	TP.1:55–60 cm	Carbonised coconut endocarp: shell midden	2473±31	21.3±0.2	2360–2650
Wk-28235	TP.1:70–75 cm	Carbonised coconut endocarp: shell midden	2510±30	21.3±0.2	2360–2700

1. Marine shell determinations were calibrated with deltaR set at –158±68 after Petchey and Clark (2011) with the Marine 09 calibration curve.
2. Cremated human bone was calibrated with the SHCal04 Southern Hemisphere Calibration as were determinations on wood and nut charcoal following advice from F. Petchey (Waikato Radiocarbon Dating Laboratory, Waikato University).

tion using Calib 5.0.1 (see Table 1). Age determinations on three of the shell artifacts associated with human remains, and results on burned human bone and charcoal from two post holes (Features 5 and 6), span 2300–2700 calBP and are indistinguishable from dates on midden nutshell. An age range of ~2400–2600 calBP for the midden is also suggested by the predominantly plainware ceramic assemblage (Connaughton 2007). Age results indicate, therefore, that the human remains were placed in a pit dug into an existing and recently deposited midden 30–40 cm thick. A round structure was built to demarcate the human remains after which there was no further midden deposition.

Shell artifacts

Four worked shells of *Tridacna* sp. and *Conus* sp. were associated with the concentration of burned bone (Figure 4). The upper flaked *Tridacna* sp. fragment is 17.8 mm (dorso-ventral) and 13.5 cm (anterior-posterior). The valve has been reduced by percussion to remove the upper margin and folds, and then split along the dorso-ventral line by direct percussion in the hinge area. Percussion was used to remove the upper margin of the lower *Tricdana* sp. shell before the valve was split at the mid-hinge area. The two valves represent one or more large *Tridacna* sp., but the purpose of working the valves is uncertain. *Tridacna* sp. adzes made from the dorsal and ventral (hinge) area, long units, and narrow and wide rings figure in several Lapita assemblages, but there is little information about the reduction sequence used to create different artifacts types (Szabó 2004:345). Similarly, the two *Conus* sp. shells associated with the human remains have been partially worked. The spire of the largest *Conus* sp. shell found with the bone concentration has been ground down to the shoulder and the exterior and interior circumferences have been bevelled. The most likely artifact form being produced is a *Conus* ring (outside diameter = 52–54 mm, inside diameter = 34.3 mm). Small *Conus* rings are a feature of many Lapita and post-Lapita assemblages including those of Fiji-West Polynesia (Szabó 2004; Connaughton 2007; Clark and Szabó 2009). Percussion was used to detach the shoulder from the body of the second worked *Conus* shell

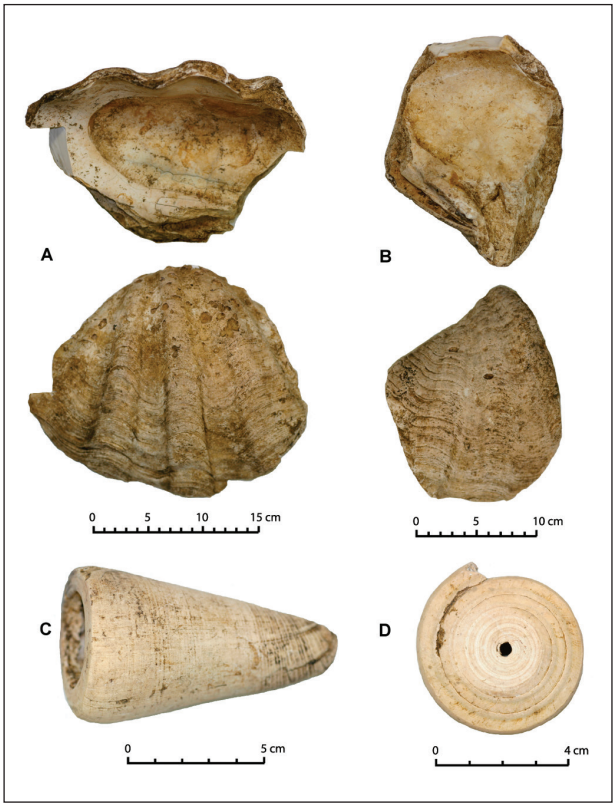

Figure 4. Talasiu shell artifacts. A=worked valve of *Tridacna* found at the base of the human bone deposit (Wk-23000), B= worked valve of *Tridacna* capping the bone concentration (Wk-22999), C=worked *Conus* shell (Wk-23001), D=worked *Conus* shell in F6. Radiocarbon dating samples were taken from the excised areas on the Tridacna shells.

(found in Feature 6) and the spire was partially ground. The exterior diameter of the shell (47–49 mm) also suggests production of a small ring, but there was no grinding of the undersurface, which is common in the ring reduction sequence (Szabó 2004).

Bone assemblage

The bone concentration contained 2.2 kg of human remains currently curated at ANU (College of Asia and the Pacific). Taphonomic and morphological data collections were preceded by bone reconstruction to facilitate element identification, minimum number of individual assessment and recognition of perimortem traumatic modifications (Ubelaker 2009). At least four individuals partially represented by fragmented and burned remains were identified: one child aged between three and ten years old represented by infracranial elements and three adults including a male of middle-to-older age, represented by cranial and infracranial elements. The morphological features of these remains will be reported elsewhere. We focus here on the body treatment and the reconstruction of the sequence of activities using bone fragment condition and the anatomical composition of the skeletal assemblage (Table 2).

Reconstruction of treatment and behaviour sequence

Pre-burning

The remains of at least four individuals identified at the Talasiu site do not show signs of a pre-burning treatment. The remains do not seem to have been submitted to active defleshing and dismemberment prior to heat exposure. No evidence of cutmarks or other perimortem bone modifications, which are discernible on burned bone (Herrmann & Bennett 1999; de Gruchy & Rogers 2002), was detected on any fragments.

The bodies appear to have been subjected to heat shortly after death and prior to decay of soft tissue. Variability in bone colour across the assemblage and in the colour distribution on single pieces of bone was recorded (Figures, 5, 6 and 7). Seven of the 12 long bone shaft segments and a mandible exhibit heterogeneous colour patterning suggestive of protective elements around the bones at the time of fire/heat exposure (Symes *et al.* 2008; Ubelaker 2009) (Figures 7). These elements display patches of unburned bone surrounded by a black ring in a larger area of gray/white colour. In other bones the effects of heat seem to have been localized. Two of the three partially reconstructed crania exhibit gray/white spots outlined by a black ring in an unburned bone area as exemplified in Figure 5. This pattern is similar to that found in a forensic study of accidental body burning (Symes *et al.* 2008). A more uniform colour distribution across the surface of skeletal elements is expected when defleshed, green and dry, bones are burned through direct and indirect heating in subsurface contexts (Buikstra & Swegle 1989; Bennett 1999). The absence of features characteristic of bone burned fresh/green, as warping, shrinkage and curved transverse fractures, (Buikstra & Swegle 1989; Spennemann & Colley 1989; Herrmann & Bennett 1999; Whyte 2001) in the assemblage is compatible with this interpretation and likely due to low heat intensity (Guillon 1987). Corroborating low intensity of the heat source, the only heat-related surface modification is occasional delamination (20 cases) along with transverse cracks and superficial checking (32 cases) observed in adult bones (Figure 6), half of the adult bone fragments are unburned or merely exhibit reddish, brown and black coloration and only 40% of the lower limbs bones of the child show evidence of burning.

Table 2. *Talasiu human remains summary description.*

Attributes	Observations	Method/recommendations
MNI	3 adults 1 subadult	MNI: Ubelaker (2009) Sex: Ferembach *et al*. (1979) Age at death: Scheuer & Black (2000)
Weight	Adult: 2101.1 g, Subadult: 111.2 g	Mc Kinley (1993), Duday (1987)
Number of fragments	Adult: 989, Subadult: 55	Duday (1987)
Skeletal representation (% total weight within assemblage)	Skull: 34.9%, Appendicular: 47.5% Axial: 13.8%, Extremities: 1.0% Unidentified: 2.8%	Duday *et al*. (2000) Blaizot (2005)
Burning (% total weight within assemblage)	Unburned: 4.2%, Charred: 40.0% Calcined: 51.2% Multiple coloration : 4.6%	Symes *et al*. (2008) Shipman *et al*. (1984) Buikstra & Swegle (1989)
Heath related surface modification (number of fragments)	Warping: 0, Transverse curvilinear fracture: 0 Deep checking or reticular cracking: 0 Superficial checking or transverse cracking: 32 Delamination or exfoliation: 20	Whyte (2001) Buiskstra & Swegle (1989) Spennemann & Colley (1989) Herrmann & Bennett (1999)

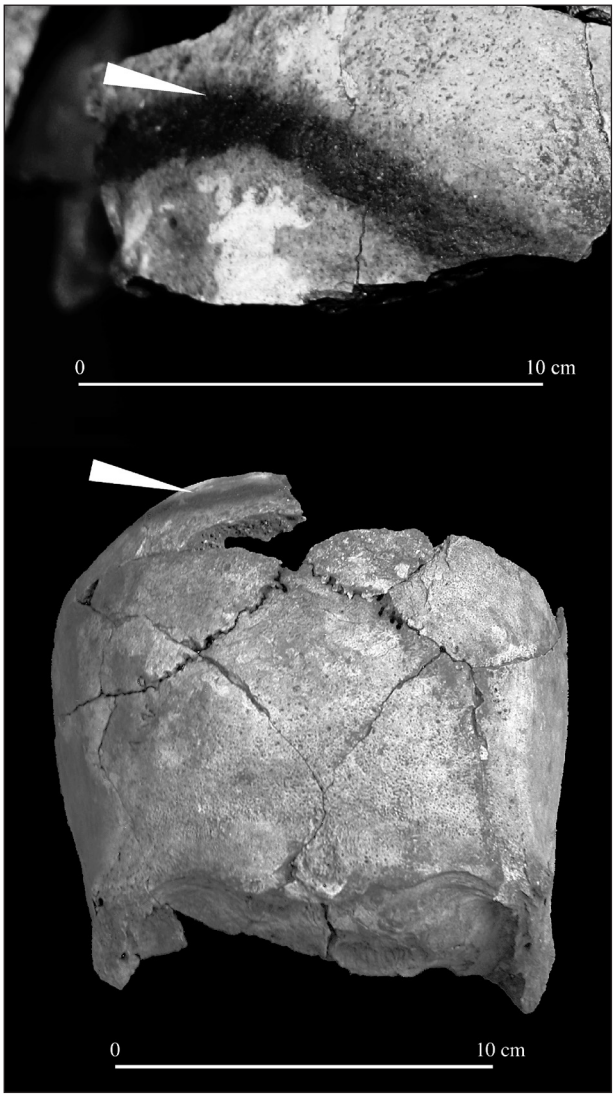

Figure 5. One of the Talasiu adult skulls in posterior view, the white arrow points to the burned spot surrounded with a brown ring, and close-up. Note the pentagonal shape typical of Polynesian skull (Houghton 1996) and evidence of strong muscle development in the occipital region, a feature also observed in later skulls from Tonga (Sava 1996). The skulls of the two other adults were less robust in appearance, with one lacking strong muscle attachments in the occipital region.

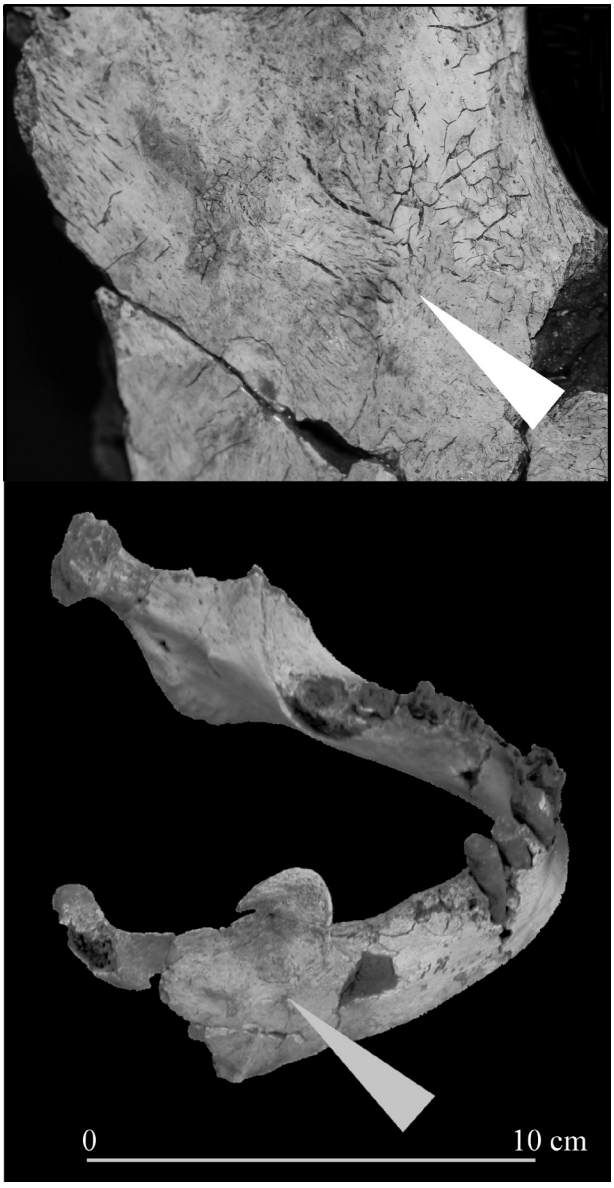

Figure 6. Transverse cracks and superficial checking on an adult mandible from Talasiu, indicated by the white arrow, and close up.

Burning

The bones display similar patterns of burning, suggesting two possibilities: the individuals were exposed to heat/fire of low intensity during a single event or each individual was exposed separately. That exposure to heat was not intended to completely dispose of the bodies through burning is likely for three reasons. First, only 50% of the bone assemblage has evidence of heating to a point at, or near, calcination as recognized by bones with a gray-blue and white hue. Second, the assemblage includes large-sized fragments and many bones were probably larger and more intact immediately after burning (several long bones are almost complete after reconstruction) (Table 2). Third, individuals were only partially burned with burning on one of the two lower limbs of the child along with differential burning of adult remains with cranial and appendicular remains less burned than axial elements (Figures 5 and 7). These features, as well as evidence for localized burning and element protection, suggest that treatment involved limited or incomplete exposure of bodies to heat, and little

Figure 7. Burning patterns and color variation across adult ulna (A), radius (B) and femur (C) from Talasiu. Note (in A and C) the pattern of burning and change in color across the bone suggestive of protective elements around the bone at the time of fire/heat exposure.

or no manipulation of the human remains during burning. This burning pattern is unusual in comparison to other funerary cremations that produce a larger proportion of calcined fragments and generally smaller fragments in both primary pyres and secondary deposition placed in urns and the ground (Blaizot 2005).

Collection, transfer, and final placement

Only fractions of the burned remains of the four individuals were collected after burning. The child is represented by bone fragments and epiphyses of lower limbs and feet weighing only 112 g. The three adults are represented by only 2.1 kg of bone, while the minimum average weight of a modern cremation (one individual) ranges from about 1002–2520 g (Hermann 1976; Krogman 1978; McKinley 1993).

Anatomical regions were differentially gathered as shown by the relative weight of bone categories (cf. Duday 1987; Duday *et al.* 2000). The relative under-representation of the axial skeleton, of the hand and foot bones and, to a lesser extent, of other parts of the appendicular skeleton (Table 2), might be the result of differential bone resistance to burning combined with the variable preservation of buried burned bones (Blaizot 2005). However, the relative over representation of the adult skull, 39% versus 21% (expected proportion of skull weight in a skeleton, Krogman 1978), probably reflects cultural selection and the inclusion of an isolated cranium with the assemblage. This characteristic of the Talasiu assemblage is also indicated by the minimum number of adults revealed in the element representation. At least three adults are represented in the cranial elements, while two adults are present based on the mandibles, ulnae and tibiae, and only one adult based on femur, humerus, radius, hand and foot bones. It is equally confirmed by articulations and pairs matching in the infracranial elements that failed to identify additional individuals.

The bones, worked shells, ash and charcoal were not rigorously separated from each other except for the *Tridacna* sp. valves placed at the bottom and top of the interment pit. Refitting of bone fragments from the upper and lower parts of the main concentration as well as conjoins of bone fragments in a posthole with those in the concentration suggest that all human remains were deposited in a single event. The presence of large-sized bones in the main assemblage is consistent with short-distance transfer of the burned remains.

DISCUSSION

Body burning can result from three very different processes: (1) cannibalism; (2) accidental burning of the body and, (3) funerary cremation. The possibility of an anthropophagic event is slim, despite the relatively high number of individuals involved. Of the nine traits Storey (2008) associates with cannibalism in Oceania only two are present in the Talasiu bone concentration: rate of burning exceeding 10% of the assemblage and there is an uneven representation of skeletal elements. Anomalies in element representation at Talasiu are not those noted in cases of cannibalism in the Pacific (i.e. over representation of appendicular to axial elements (Degusta 2000) and over-representation of hand and foot bones combined with under-representation of cranial elements (Steadman *et al.* 2000). Moreover, we note that cannibalized human remains from Pacific Islands generally occurs as bone scatters in midden layers or of remains concentrated in earth ovens (Steadman *et al.* 2000; Best 2002; Cochrane 2005, but see Rieth 1998; Cochrane *et al.* 2004; Pietrusewsky *et al.* 2007, Worthy & Clark 2009). That the Talasiu individuals were accidentally burned, or that heat exposure of bodies was a deliberate stage of a mortuary sequence (e.g. Millaire 2004), cannot be definitively ruled out. Nonetheless, suggestive of a funerary sequence are: the selective collection of remains, the form and arrangement of the deposit, the presence of artifacts, a coincidence in the number of shell artifacts and the number of individuals, and an association of the bone concentration with a round structure.

The successive actions forming the Talasiu mortuary sequence are notable for their unfinished nature: incomplete burning of bodies; incomplete collection of skeletal elements; and the addition of incomplete shell artifacts. We recognize that these actions need not be interrelated, but they fit with the basic principle of secondary funerary rites: '... to make a material object or living being pass from this world to the next, to free or create the soul, it must be destroyed ... As the visible object vanishes it is reconstructed in the beyond' (Venbrux 2007: 5; Hertz 1928: 34–35, 1960: 46; see also Hertz 1907; Bloch & Parry 1982; Thomas 1985; Metcalf & Huntington 1991; Schroeder 2001; Rakita *et al.* 2005). Thus, burning, bone selection and commingling of remains reduce the physical structure/identity of each individual, burning of shell artifacts destroys personal items, and collection and deposition finally transforms the altered bone and shell assemblage into a single unit marked off from the living by an enclosed structure.

Secondary rites were a major part of funerary practices in the Lapita culture (*ca.* 3000–2500 BP) and were especially prominent at the 3000 year-old Teouma cemetery in Vanuatu (Bedford *et al.* 2009; Valentin *et al.* 2010). Lapita burials in PNG, New Britain, Vanuatu, New Caledonia and Fiji as well as burials dating to 2800–2400 calBP in Western Micronesia reflect simpler practices and definitive inhumation (Valentin 2010) (Table 3). In practice, secondary funerary rites involve an intermediary period after which the bones of the deceased are removed from their original place of deposition and transferred during a final ceremony to a new location, which is the final resting place (see Miles (1965) for variability in the timing of secondary rites). Temporary interment, a natural and slow method to obtain bones, was practiced at Teouma, indicating a long intermediary period. In other sites where definitive inhumation was practiced, the intermediary phase was probably very short. The burning of Talasiu human remains might testify to the use of fire to shorten the interval between death and final burial, as cremation can be considered a form of temporary burial similar to temporary exposure or temporary inhumation (Hertz 1928: 29–30, 1960: 41–43 but see Rakita & Buikstra 2005). Cremation was used rarely and in a different way by Lapita and post-Lapita groups to reduce the dead body as at Teouma and at Dori in New Ireland (Golson 1991; Spennemann 1988; Scott *et al.* 2010, see Table 3).

At Talasiu, the final mortuary stage has involved remains of at least four individuals that were deposited during a single event with no evidence of repeated/successive bone deposition; the location was used only once for burial. The activity has mobilized selected skeletal remains of the four individuals. The emphasis on cranial elements is consistent with the importance given to the skull in many Oceanic cultures, including at the beginning of the third millennium BP. At the Teouma Lapita cemetery none of the articulated adult burials had crania, and the few skulls recovered were in secondary depositions (Valentin *et al.* 2010). Furthermore, at Talasiu, shell artifacts were associated to the human remains. Shell valuables, particularly those made in *Conus* sp. were important to Lapita culture and also to Neolithic societies in Island South East Asia (Szabó 2004; Szabó & Ramirez 2009). Shell grave goods, in the form of unmodified shells, and ornaments made of *Conus* and oyster shells are associated with some early burials in the West Pacific and Western Micronesia (Table 3). The Talasiu shells may represent offerings or personal belongings.

Another consideration concerns the role of the small round structure surrounding the Talasiu deposit. This structure may have been erected to protect the human remains, provide a monument to the dead, and signify the successful transition to ancestral status. The structure was located on top of a low shell midden possibly representing a slightly elevated mound. Kirch and Green (2001: 255) speculate that PPN **qafu* could relate to a low earth foundation of a god house **fale-qatua* (interestingly **qafu* has also been reconstructed by Geraghty (1983: 294) as 'heated') with the house posts (**pou*) associated with deities or ancestors. The interment of the Talasiu remains in close proximity to posts in a structure built on a low mound is suggestive of the Proto-Polynesian linguistic reconstruction, but other elements appear absent or are different, including heat treatment of remains, the inclu-

Table 3. *Characteristics of burial features in West Pacific* ca. *3000–2500 BP and Western Micronesia* ca. *2800–2400 BP.*

Sites Time period	Protocol	Graves goods	Distinctive characteristics	References
Teouma (Vanuatu) Lapita	Extended protocol using inhumation	Unworked shells, shell ornaments, decorated ceramic vessels	Adults, removal of skull and upper part of body, in situ reorganisation, curation and reburial	Bedford *et al.* 2009, Valentin *et al.* 2010, 2011
Koné (New Caledonia) Lapita	Extended protocol using inhumation	None	Assemblage of articulated and disarticulated remains of at least four adults, close to complete Lapita vessels of large size	Valentin *et al.* 2005, Sand 2010
Teouma (Vanuatu) Lapita	Extended protocol using cremation	None	One adult, selection of highly calcined fragments not larger than 95 mm in secondary deposition	Scott *et al.* 2010
Dori (New Ireland) around 2700 BP	Extended protocol using cremation	none	Cranial and infracranial elements of two individuals substantially burned and fragmented	Spennemann 1988, Golson 1991
Teouma (Vanuatu) Lapita	Simpler protocol using inhumation	Unworked shells	Infants, primary burials	Bedford *et al.* 2009
Uripiv (Vanuatu) Late Lapita	Simpler protocol using inhumation	None	Infants, primary burials	Bedford *et al.* 2011
Koné (New Caledonia) About 2700 BP	Simpler protocol using inhumation	One complete pot	Adult, primary burial	Valentin & Sand 2000
Naitabale (Fiji) Late Lapita	Simpler protocol using inhumation	Shells	Adult, primary burial	Nunn *et al.* 2007
Yalobi (Fiji) Late Lapita	Simpler protocol using inhumation	None	Adult, primary burial	Pietrusewsky *et al.* 1997
Reber-Rakival (New Britain) Lapita	Simpler protocol using inhumation	None	Adults, primary burials	Green *et al.* 1989, Anson *et al.* 2005
Caution Bay (PNG) 2900 to 4200 BP	Simpler protocol using inhumation	Shell grave goods	Adult, primary burial	McNiven *et al.* 2011
Naton Beach (Guam) 2800–2400 BP	Simpler protocol using inhumation	Unmodified shells, shell ornaments, ceramic vessels, other artifacts	Adults, primary burial	DeFant 2008
Chelechol ra Orrak (Palau) 2800–2400 BP	Simpler protocol using inhumation	Oyster shell artifacts	Adults and children, primary burials, possible differential treatment of crania	Fitzpatrick & Nelson 2008, 2011

sion of incomplete shell artifacts, and the absence of an open cleared space (**malaqe*) seaward from the **faleqatua* (Kirch & Green 2001: 255). Further exploration of vocabulary used to describe human remains and body decomposition would be fruitful as an emphasis on these is expected in societies that use secondary disposal in the mortuary sequence (Schroeder 2001).

Elsewhere in Tonga and other parts of the Pacific, mortuary activity incorporate a few of the distinctive features found at Talasiu including deposition of human bones in a pit/post hole, secondary burial of the cranium with other remains and occasional use of shell artifacts as grave goods (Table 4). No other burials in Tonga have been securely dated to the late Lapita/early Plainware phase nor do they display the range of funerary treatments identified at Talasiu. Thus, on the admittedly small amount of early funerary data from Tonga it is difficult to yet propose an ancestral connection between the Talasiu mortuary activity and the later burial practices of Tonga and Samoa. Future work is planned at the Talasiu site to increase out knowledge of early funerary variability in West Polynesia.

Table 4. *Characteristics of burial features in Tonga across prehistory*

Sites **Time period**	**Protocol**	**Graves goods**	**Distinctive characteristics**	**References**
Pea TO.6 (TO-Pe-6) (Tongatapu) Horizon I (2200–2600 calBP)	Unidentified	Worked *Conus* sp. shell similar to Talasiu with no provenience	7 human bone fragments in a posthole	Poulsen 1987
Pea TO.6 (TO-Pe-6) (Tongatapu) Horizon II	Unidentified		Concentration of less than 200 unburned human bone intermixed ash of two adults, even skeletal representation with emphasis on skull, long bones and ribs	Poulsen 1987
Pea TO.1 (TO-Pe-1) (Tongatapu) 1050–1280 calBP	Simpler protocol using inhumation	A shell adze	Adult male, primary burial, and few bones of two other individuals, Red-burned soil at base of burial pit bur not bone burned	Poulsen 1987, Spennemann 1987 Petchey *et al.* 2011
Mao'fanga (TO-Nu-50) (Tongatapu) Probably 1000–500 calBP	Complicated protocol using inhumation	A human skull	Adult, primary burial, Reuse an earth oven filled up with midden, fire light above burial	Spennemann 1989
Ha'ateiho (TO-At-96) (Tongatapu) Shell from midden *ca*. 2600 BP	Simpler protocol using inhumation		Adults, primary burial, in midden, no trace of burning, relationship midden/burial unclear	Spennemann 1989
Tongoleleka (Lifuka island) Ceramic age deposit	Unidentified	None	Scattered charred human remains in midden, no concentration	Dye 1988
Pukotala,Vaipuna Mele Havea (Ha'apai islands) Ceramic age deposits	Unidentified	None	Scattered human remains including charred bones, no concentration	Storey 2008
Houmafakalele (Niuatoputapu) Second millennium AD	Simpler protocol using inhumation, no mention of cremation as funerary method	None	Adults, primary burials	Kirch, 1988
Several sites (Tongatapu) Second millennium AD	Simpler protocol using inhumation, no mention of cremation as funerary method	Generally none	Adults and children, primary burials, rare secondary depositions (often of non funerary purpose), rare occurrences of burned human bones	Mc Kern 1929; Davidson 1969; Poulsen 1987; Spennemann 1989; Gifford 1929; Pietrusewsky 1969

CONCLUSION

The mortuary treatment practiced at Talasiu in Tongatapu during the late Lapita/early Ancestral Polynesian Society era was both ordered and complicated. The distinctive features of the Talasiu secondary burial comprise the commingling of the incomplete and partially burned remains of four individuals (three adults and one child). There was an emphasis on the selection of cranial elements along with an association of the remains with four incomplete and partially burned shell artifacts. The human and shell remains were subject to pit burial in a recently deposited midden and a small wooden structure was built around the bone deposit. Mortuary behaviour at Talasiu involved bone manipulation, selection and secondary interment, which was practiced among some Pacific societies in the period 3000–2500 calBP. However, the Talasiu mortuary behaviour also differs in several respects from that recorded in other parts of the Pacific as well as from the mortuary practices of late-prehistoric Tonga. This might be because the Talasiu mortuary sequence was a culturally rare practice that was later abandoned. Additional research is needed to investigate early funerary activity and whether there was a widespread set of mortuary be-

haviours in West Polynesia consistent with the concept of an Ancestral Polynesian Society.

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