FIRST RESULTS OF THE EXCAVATION OF THE BURIAL MOUND OF PETANIA, UVEA, WESTERN POLYNESIA

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INTRODUCTION

One of the characteristics of the archaeological landscape of most of the islands of Polynesia is the presence of stone monumental structures. In western Polynesia these monumental structures are mostly house platforms or mounds, fortifications and graves. The greatest variety of funerary structures has been recorded in the islands of the Tongan Archipelago, where they are termed *faitoka* and *langi* (McKern 1929:30-62; Davidson 1971:30-35; Kirch 1980). These burial mounds are often faced with natural or cut slabs of stone or coral set on one or more levels (McKern 1929:72-75). The most impressive *faitoka* and *langi* are found in Tongatapu, seat of the paramount line of the Tui Tonga (Spennemann 1986:35-40).

Burial mounds of Tongan tradition are also found in other islands north of Tonga, such as Niuatoputapu (Kirch 1988:41-52, 63-78, 244) and Uvea (Frimigacci *et al.* 1984; Sand 1986:211-216). These occurrences reflect the political, military and cultural domination of the Tui Tonga over most of the islands of western Polynesia during the mid-second millennium AD. This paper presents the first results of the excavation of a burial mound of this type on the island of Uvea.

Uvea (Wallis Island: 13°S, 176°E) is a Polynesian island of basaltic origin, about 15 km long (Fig. 1), located half-way between Fiji and Samoa. It was peopled approximately 3000 years ago by sailors who made Lapita pottery (Frimigacci and Vienne 1987:117; Sand 1987:78-87). During the 15th century the island was invaded by Tongan warriors (Sand 1991:92), who transformed the traditional political organisation and imposed a paramount chief of Tongan origin over the Uveans (Burrows 1937:19). They also introduced the tradition of building big tombs for the aristocratic families. These tombs were mounds in the center of which a burial chamber, made with basaltic or beachrock slabs, was constructed. As in Tonga, these burial mounds are also called *faitoka* in the Uvean language.

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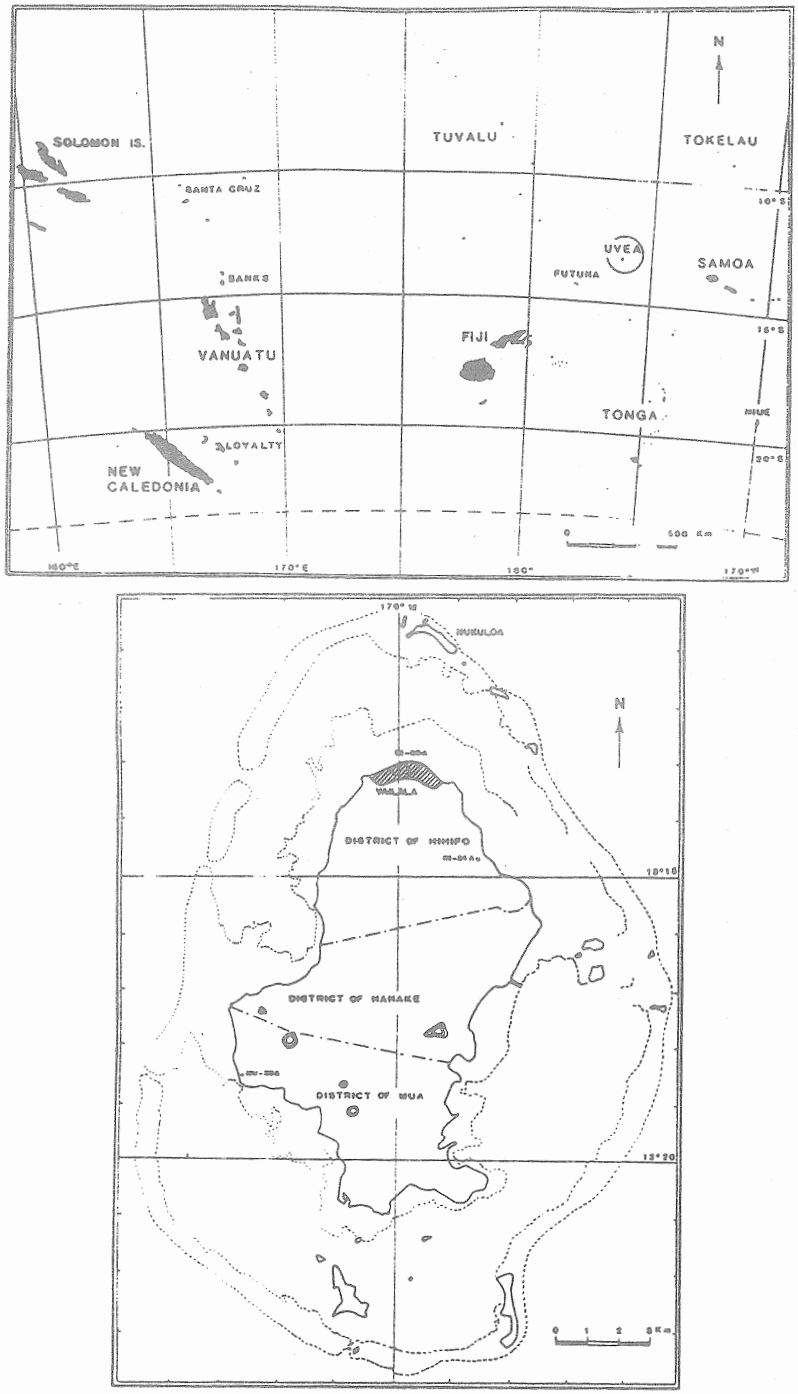

FIGURE 1: LOCATION OF UVEA IN THE WESTERN PACIFIC AND A MAP OF THE ISLAND

Most of the *faitokas* of Uvea were destroyed in the 19th and 20th centuries so that their stone slabs could be used for the construction of churches. The archaeological excavations conducted so far on such burial mounds in the Tongan islands (McKern 1929:104-106, 108-109; Davidson 1969; Spenneman 1986a:68-74; Poulsen 1987:26; Kirch 1988:127-138), in Futuna (Frimigacci *et al.* 1986; J.P. Siorat, pers. comm.) and in Uvea (Frimigacci *et al.* 1984:113-21; 1987:4-6; Sand *et al.* 1989:20-24) have only uncovered tombs without burial vaults.

In June 1989 we studied a *faitoka* called Petania, located in the village of Vailala in the northern part of the island (Fig.1). This *faitoka* is said to have been constructed for a southern Uvean chief, a man of Tongan origin, who was killed with his warriors in a war against the villagers of Vailala. The burial had been opened to extract stone slabs for the building of a church in the 1920s and 1960s.

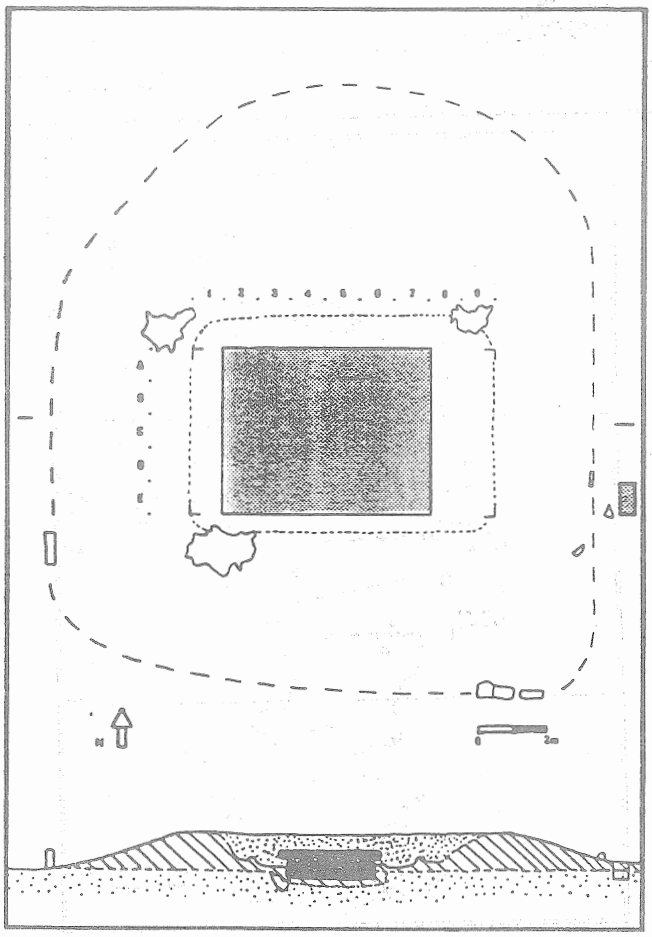

FIGURE 2: PLAN AND CROSS-SECTION OF THE BURIAL MOUND OF PETANIA

Before we began our excavation it was agreed with the Uvean custom authorities and the land-owners that the skeletons would not be taken away for anthropological study. Thus all data had to be recorded on site and all bones were replaced in the mound after the excavation was finished. In all, an area of $30m^2$ was opened in the central part of the *faitoka*.

PRESENTATION OF THE ARCHAEOLOGICAL RESULTS

The Construction of the Mound and of the Burial Vault

The *faitoka* of Petania is 18.5 m long by 16 m wide at its base, and 105 cm high (Fig. 2). The flat summit area is 9 m long and 6.5 m wide. The surface of the mound is composed of coarse sand and clayey earth. Excavation has revealed that the outer part of the mound was constructed first with ferruginous earth from the central plateau of Uvea (Fig. 2, section). This earth had been placed in a circle, leaving the central part of the structure open. The mound was originally surrounded by slabs placed vertically.

In the center of the mound, at its base, a burial vault was constructed of beachrock slabs probably from the islet of Nukuloa in front of Vailala (Fig.3). The vault is small when compared to surviving descriptions of other burial vaults on Uvea, being 220 cm long, 125 cm wide and 65 cm high. Around it, burial pits were dug in the ring of ferralitic earth.

Unfortunately, the skeletons buried inside the vault and over it were destroyed by the openings made during this century. According to traditional accounts and European descriptions (Villaret 1963:206), three persons were buried in the vault, which was roofed with two slabs, one of them weighing more than two tons.

The First Period of Inhumations Around the Burial Vault

Excavation around the vault revealed that probably over 150 persons had been buried at the same time. Of these, 103 have been excavated. They were buried in six successive stratigraphic levels, placed in circles around the burial vault. Most of the corpses had been wrapped in mortuary shrouds (*siapo*) made of barkcloth (*tapa*). This can be deduced from the raised position of their shoulders, as well as by the presence of a brown stain around the bones left by the pigments present on the barkcloth (McKern 1929:106; Davidson 1969:264). Most of the skeletons were extended and deliberately covered with white sand.

In the lowest burial level (Fig. 3) the corpses were placed in pits dug directly into the ferruginous earth. One skeleton at this level was buried across the eastern side of the vault in an unusual position. It was that of a tall man about 180 cm in height. He lies in the direction towards which the heads of the persons buried in the vault were pointed. This was also the only skeleton not buried in sand, but under a hard crust of pebbles. The corpse was buried in a large shallow pit with legs wide apart and slightly flexed. This position for an inhumation burial has been reported for other burials in the south-western Pacific, with examples in southern Uvea (Frimigacci *et al.* 1984:113-121), Futuna (Frimigacci *et al.* 1986), Niuatoputapu (Kirch 1988:133-138) and Vanuatu (Garanger

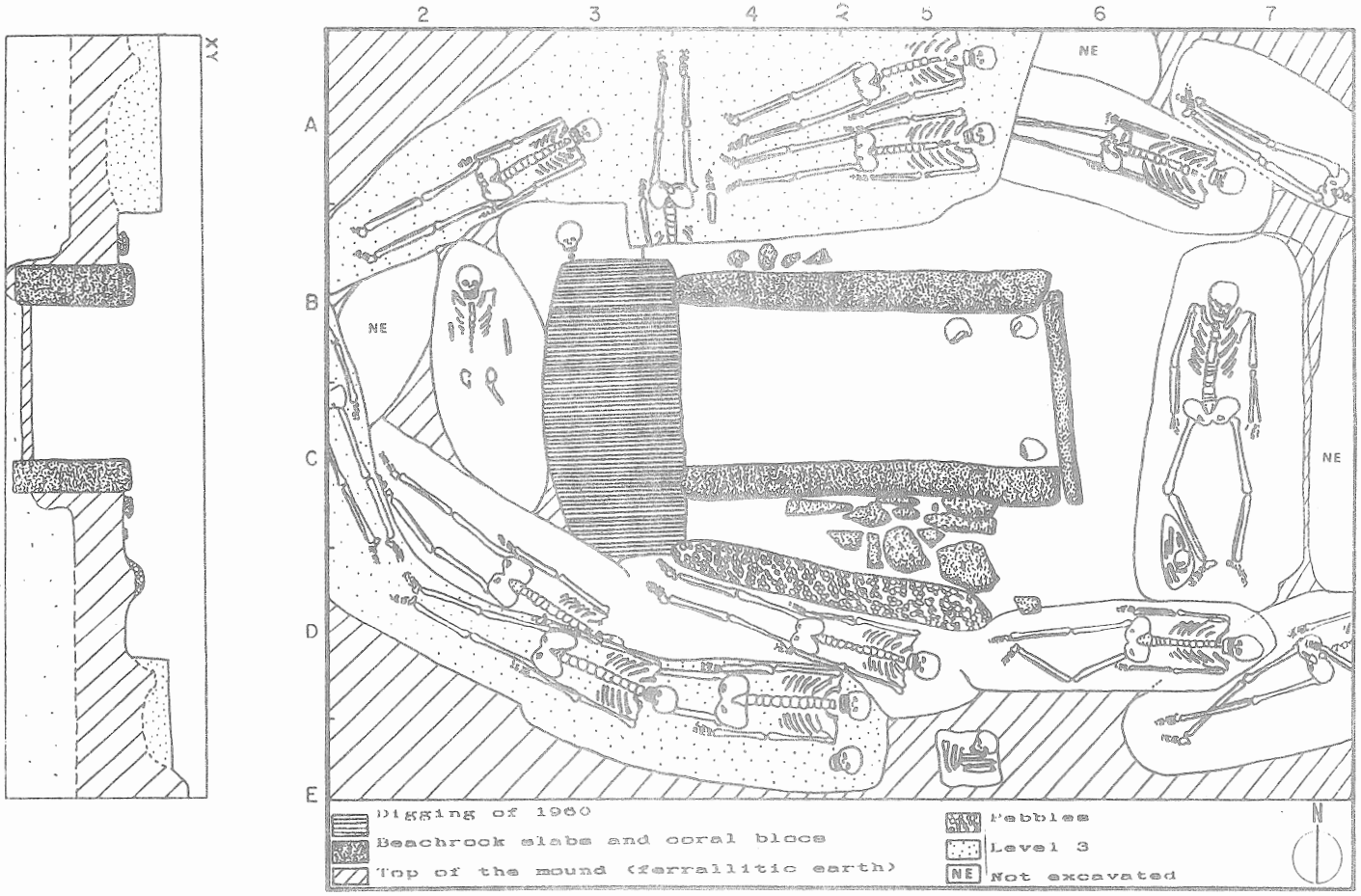

FIGURE 3: SOME BURIALS OF LEVELS 1, 2 AND 3
(scale 1:40 approx.)

1972:63, 67), often in association with a person of high rank. The deceased in this case could have been the *matapule*, the guard of one of the important people buried in the vault. Near his right leg was placed a secondary inhumation of a child.

The skeletons buried in the other levels were placed in concentric circles. Most of them had been placed one body partially over another, that is, the head of one person was placed over the femora of the skeleton behind and below (Fig. 3). This general pattern was present in the five upper levels, with only some slight variation. To our knowledge, it is the first time that this kind of burial practice has been discovered in the Pacific. Some corpses, however, were buried in a more normal way one beside another. Some skeletons of young children were also present.

The sixth and upper level of this first burial horizon was formed by a final circle of skeletons, again placed partially one over the other around the vault. Some of the skeletons at this level have been partially destroyed.

The excavation of this lower burial horizon also revealed the presence of a certain number of secondary inhumations. These were of different form, most being rectangular in a bundle (Garanger 1976:16). In the lowest levels the bones were wrapped in long bundles in mortuary shrouds, with the skull placed at one end, forming a package appoximately one meter long and 25 cm wide and placed in association with a primary inhumation.

After the construction of the lower burial horizon of the mound the pressure of the sand compressed the original stratigraphy, so that some skeletons were partially displaced by the skulls of bodies lying under them.

Later Burials in the Top of the Burial Mound, and Recent Openings

Long after the original closing of the *faitoka* other people were buried at various times in the top of the mound under small mounds of sand. The excavation of the upper 20 cms of the mound yielded the remains of over 50 skeletons, most partly eroded away.

In the 1920s and 1960s the central part of the *faitoka* was opened and all the skeletons situated over the vault were removed. In addition, three slabs were removed from the burial chamber. The bones of the removed skeletons were then reburied around, inside and over the vault.

Archaeological Materials

Artefacts found in association with the skeletons are few, as in other excavated burials in western Polynesia (McKern 1929:106; Davidson 1969:264, 269-270). In the six first levels, 12 perforated pendants made of whale tooth were found together with some beads of bone or ivory and two discs of mother of pearl shell. There was also a perforated needle and an *Ovula ovum*.

In the recent horizon, 72 beads of blue glass of European origin were found, indicating that the last inhumations took place after the first contacts with Europeans.

MAJOR CONCLUSIONS OF ANTHROPOLOGICAL, PALAEOPATHOLOGICAL AND PALAEODEMOGRAPHICAL STUDIES

The partial excavation of the *faitoka* of Petania brought to light 153 primary and secondary inhumations. The remains of a minimum of 82 individuals were also found reburied after the recent openings. If we add to these two totals the numerous skeletons that have not been excavated, it seems that over 150 persons were buried at the same time in the burial mound during the major burial ceremony. In all, over 250 people were buried in the faitoka of Petania.

During the excavation an examination was made of 118 skeletons, including 26 adult males, 18 adult females and 30 children and adolescents. Three physical and biological aspects of this population were considered: morphology, palaeopathology and palaeodemography.

Morphology

During the Pre-European period the Uvean population was morphologically close to other Polynesians, in particular to those of Tonga and Samoa, as shown by the principal components analysis presented as Figure 4. Here, the means of eight cranial measurements for the Uvean population are compared with data provided by Pietrusewsky (1977) for other Pacific populations. The cranial and facial measurements and non-metric characteristics of 36 Petania skulls are similar to those of the Tongan, Samoan and Fijian samples studied by Pietrusewsky. In addition, the Petania males sometimes have a flattened occiput, probably as a result of intentional cranial deformation.

Concerning the Petania post-cranial skeletons, upper limbs were more robust than lower limbs. The stature of the Petania people varied from 1.60 to 1.70 meters. High individual variability occurs in both the male and the female samples, as also noticed by Villaret (1963:205) amongst the present-day population. This could reflect the results of prehistoric population contact.

The high development, robustness and muscular tracks of the shoulder girdle and the upper limbs, together with observed arthritic changes, indicate that men carried out heavy and repeated activities such as carrying loads or paddling. This has already been shown for some individuals from Tongatapu by Spennemann (1987a, 1987b). This muscular development indicates the existence of a sexual division of labour.

Palaeopathology

Dental caries were not very frequent and women over forty years of age were most severely affected. Does this observation indicate dietary differences according to sex? The abundance of tartar and alveolar bone resorption also indicates a generally poor level of dental health, as also noted on skeletons from Tongatapu (Taylor 1987). Nevertheless, the two upper central incisors of one of the Petania individuals have abrasion on their labial faces resulting from rubbing with a small stick to clean the teeth.

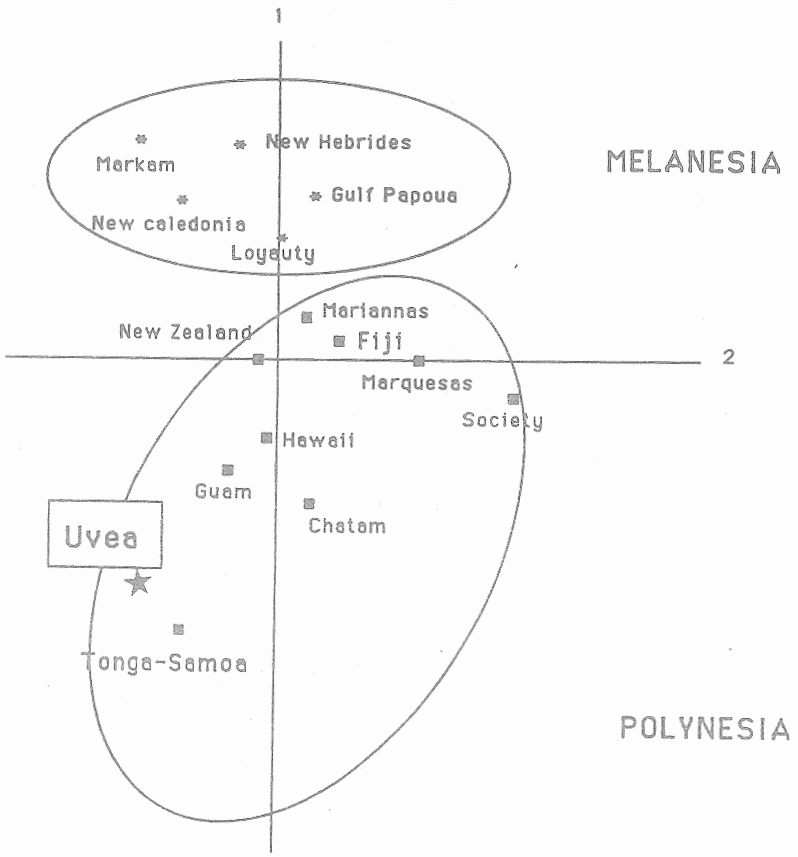

FIGURE 4: PRINCIPAL COMPONENTS ANALYSIS OF CRANIAL MEASUREMENTS OF THE UVEA POPULATION FROM THE *FAITOKA* OF PETANIA AND SEVERAL PACIFIC SAMPLES STUDIED BY PIETRUSEWSKY (1977)

Our observations suggest that both tibial bowing and treponemal disease were present among the Uvea population prior to regular European contacts. If we take into account the physical environment of these people and the date of the site, the hypothesis of an endemic form of treponemal disease such as yaws seems acceptable. But this pathology could also have been brought to Uvea from neighbouring islands where contacts with European ships were more frequent.

Tuberculous lesions where observed on four thoracic vertebrae of a skeleton from the later burial phase. This disease was perhaps introduced through the first European contacts with Uvea.

Bone traumas are frequent and affect almost exclusively the upper limbs. The bone most often fractured was the ulna, which showed healed fractures in a number of male adults. Callus formations are extensive and sometimes X-ray photography shows a bad

consolidation. These ulna fractures suggest a direct impact rather than a fall. Furthermore, the age and the sex (adult male) of the traumatized people suggest that the fractures occurred to the forearm during aggressive behaviour. This is the parrying fracture, reported from other populations of the Pacific area (Webb 1989).

Palaeodemography

In this sample of the Uvean population the proportion of young children is low, representing only 9.8% of the buried skeletons. This observation leads us to reject an epidemic hypothesis as an explanation for the large number of diseased persons in the population. Indeed, the high proportion of male adults and adolescents (overall sex ratio is 1.45 males to 1 female) would rather indicate that much of the mortality was due to war. This can be confirmed by the oral traditions which relate to the Vailala war (Sand *et al.* 1991; see above).

CONCLUSIONS

The excavation of the burial mound of Petania has given new information about the mortuary practices, the physical characteristics and the way of life of some people of Uvea during the Pre-European period. It has allowed us to understand more precisely how tumuli containing a burial vault were constructed. The partial destruction of the vault deprives us of detailed information about its original contents, but excavation around the vault has nevertheless allowed us to discover a specific and unusual type of mortuary practice.

The anthropological study, in agreement with the archaeological study, seems to confirm the oral traditions about Petania. Our preliminary conclusion is that the individuals buried in the six levels of the first mortuary horizon of the burial mound were probably killed during a war between, according to oral tradition, the warriors of the village of Vailala and people from the south of Uvea. This could explain the large number of people who were all buried at the same time.

It is hoped that other burial mounds with a burial vault will be excavated in western Polynesia in the future to give more detailed information about this particular type of mortuary practice.

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REFERENCES

Burrows, E.G. 1937. *Ethnology of Uvea* (Wallis Island). Honolulu: Bishop Museum Bulletin 145.

Davidson, J.M. 1969. Archaeological excavations in two burial mounds at 'Atele, Tongatapu. *Records of the Auckland Institute and Museum* 6 (4-6):251-286.

------ 1971. Preliminary report on an archaeological survey of the Vavau Group, Tonga. *Bulletin of the Royal Society of New Zealand* 8:29-40.

Frimigacci, D., Siorat, J.P. and Vienne, B. 1984. *Inventaire et Fouille des Sites Archéologiques et Ethnohistoriques de l'Ile d'Uvea (Mission ORSTOM-CNRS 1983)*. Nouméa: ORSTOM.

Frimigacci, D., Sand, C. and Siorat, J.P. 1986. *Fouilles de Sauvetage à Futuna (Wallis et Futuna)*. Nouméa: ORSTOM.

Frimigacci, D. and Siorat, J.P. 1987. *Fouilles de Sauvetage à Uvea (Wallis et Futuna)*. Nouméa: ORSTOM.

Frimigacci, D. and Vienne, B. 1987. How they became Polynesians: an ethnoarchaeological investigation of Futuna and Uvea. *Man and Culture in Oceania* 3 (Special Issue): 117-9.

Garanger, J. 1972. *Archéologie des Nouvelles Hébrides.* Publications de la Société des Océanistes 30.

------ 1976. Les sépultures en Océanie. *Séminaire de Préhistoire*, Paris, pp. 14-17.

Kirch, P.V. 1980. Burial structures and social ranking in Vavau, Tonga. *Journal of the Polynesian Society* 89:290-308.

------ 1988. *Niuatoputapu: the Prehistory of a Polynesian Chiefdom*. Seattle: Thomas Burke Memorial Washington State Museum Monograph 5.

McKern, W.C. 1929. *Archaeology of Tonga*. Honolulu: Bishop Museum Bulletin 60.

Pietrusewsky, M. 1977. Etude des relations entre les populations du Pacifique par les méthodes d'analyses multivariées appliquées aux variations crâniennes. *L'Anthropologie* 81(1):67-97.

Poulsen, J. 1987. *Early Tongan Prehistory*. 2 Vols. Canberra: Department of Prehistory, Australian National University, Terra Australis 12.

Sand, C. 1986. *Les Monuments Funéraires de l'Ile d' Uvea.* Maitrise de Préhistoire Océanienne, Université Paris 1.

------ 1987. *Chronologie de la Céramique du Berceau Polynesien*. D.E.A. de Préhistoire Océanienne, Université Paris I.

------ 1991. La préhistoire et l'ethnohistoire de l'île de Wallis: un essai de synthèse. *Bulletin de la Société d'Etudes Mélanésiennes* 28:84-103.

Sand, C. and Frimigacci, D. 1989. Recherches préhistoriques et ethno-archéologiques à Uvéa. *Rapports d'Activité, Sciences Sociales, Archéologie no. 2*. Nouméa: ORSTOM.

Sand, C. and Valentin, F. 1991. Complémentarité de l'étude anthropo-archéologique et de l'analyse de la tradition orale du tertre funéraire de Petania (Wallis - Polynésie Occidentale). *Méthodes d'Etude des Sépultures, Saintes 91*, pp. 71-78. Paris: C.N.R.S.

Spennemann, D.H. 1986. *Archaeological Fieldwork in Tonga 1985-1986.* Canberra: Australian National University.

------ 1987a. Changing gender roles in Tongan society: some comments based on archaeological observations. *Tradition and Modernity in Tonga*. Canberra.

—— 1987b. Reanalysis of the human remains at To.1. Appendix 9 in Poulsen, J., *Early Tongan Prehistory*, Vol. 1, pp. 289-303. Canberra: Department of Prehistory, Australian National University, Terra Australis 12.

Taylor, R.M.S. 1987. Some excavated jaws and teeth from Tonga. Appendix 10 in Poulsen, J., *Early Tongan Prehistory*, Vol. 1, pp. 304-7. Canberra, Department of Prehistory, Australian National University, Terra Australis 12.

Villaret, B. 1963. Découvertes archéologiques aux îles Wallis. *Journal de la Société des Océanistes* 19:205-206.

Webb, S. 1989. *Prehistoric Stress in Australian Aborigines; a Palaeopathological Study of a Hunter-Gatherer Population*. Oxford: BAR International Series 490.