ILIILI WATERTANK: PREHISTORIC BURIALS FOUND IN MARCH, 1995
Addendum to the Earlier Report, February 1995

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1.0 JOURNAL OF EVENTS AND ACTIVITIES

Historic burials were located January, 1995, at the site of the planned ASPA watertank, northwest of the golfcourse in the Iiliili locale on the island of Tutuila, American Samoa. ASPA archaeologists under the direction of Dr. David Eisler, excavated the remains. Chief Sagapoluutele authorized his representatives to remove and reinert the remains. Dr. Eisler wrote a report of his findings. As a result of the reported findings, the tank was re-engineered for an adjusted location to avoid the known burials (Map 1). The current report is an addendum to that first report.

With construction of the re-located foundation for the tank to begin in mid-March, 1995, ASPA archaeologists marked the known burial area for construction avoidance. Alerted to the need for the services of an archaeological monitor during the ground-modifying bulldozer work, Mr. Atu Filisi, an experienced project monitor under Dr. Eisler's supervision, was on site Tuesday, March 21 as construction commenced.

On that day Mr. Filisi called Dr. Eisler at 12:00 noon with the news that at 9:30 a.m. he saw the tell-tale sand of a burial. It was uncovered by the project bulldozer engaged in scraping away the ground cover. At that time Mr. Filisi requested the bulldozer work to continue in a different location, pending resolution of the problem of the probable burial. The construction crew agreed, and requested speedy research to limit the likelihood of spirit-induced illness.

The ASHPO Archaeologist, Mr. David DeFant, was off-island that Tuesday, at a meeting on Ta'u, and could not be notified of the find, and the work agreement. Chief Nate (ASPA) agreed to contact Iiliili Chief Sagapoluutele about the burial, and the planned scientific research.

ASPA archaeologists Drs. Eisler and Gehr sped to the site and began the excruciatingly careful excavation of the remains, the first sand-burial to be technically reported in the archaeological literature for American Samoa, or any part of all of the Samoan Archipelago.

Sighting across the project land to the burial from the proposed tank center Dr. Gehr read F138 (Field azimuth, uncorrected for declination) on his sighting compass, and on the construction map plotted the burial to a point at the edge of the planned catchment basin (see Map 1).
Discussion with Fletcher Construction's Mr. Dean Hudson made it clear that the catchment basin could easily be constructed in a location a little away from this burial.

In the afternoon following the initial mapping and planning, we (ASPA's archaeological field research team) dug three shovel tests. These tests were conducted to discover the orientation of the long axis of the presumed skeletal remains. The shovel tests consisted of a circular opening in the soil surface 30cm in diameter, soil removal to continue progressively to bedrock, assumed to be less than one meter below the current surface. The results were as follows:

#1 the southernmost -- nearly a meter away from the exposed sand; human bone appears in the recovered soil.

#2 the northernmost -- nearly a meter away from the exposed sand; no bone, no grave related materials of any kind.

#3 into the uncovered sand, and in the first 0-5cm of the 0-10cm below the current surface (cmbs) level appear a stone flake, a shell, sand, and flecks of charcoal. We assume the charcoal could be signs of the long years of garden use to which this land has been put, possibly the reason no surface indications of the grave were found. The soil has hardpacked inclusions of orange compressed chunks of cinder/scoria; and bone, probably skull fragments, were observed. We replaced the bone fragments in the testpits, the pits then marked with tape and refilled pending consultation with ASHPO.

March 22, Wednesday, Dr. Gehr reshot the burial location from the more clearly marked center and read 157 degrees azimuth. ASHPO DeFant met us on site, and at 10:00 a.m. we (Dr.'s Eisler and Gehr) and Mr. David DeFant arrived at a joint decision to excavate the burial this afternoon. We awaited Chief Mote's arrival to negotiate our work with Chief Sagapolutele. At 10:50 Chief Mote arrived and discussed the burial and the research aims.

At 1:00 p.m. we set up a tarp as sun shade, and staked one 2m x 1m excavation unit. Its long axis is F17B (a true bearing of 190 degrees azimuth). This worked out to parallel the orientation of the burial. As we later discover, the long axis of the bones of the interred body is oriented North (head), and South (feet). We began the work of technical excavation at 2:00 p.m., closing for the day leaving the tarp in place and covering the excavation with soil sifters.

March 23, Thursday, Dr. Gehr planned to conduct a "profile excavation" of the adult, excavating to full depth, surface to bedrock, beginning at one side of the burial parallel to its presumed long axis, and moving the vertical face of the excavation like a piece of permeable glass through the burial to the other side. Instead of the usual excavation from the top down, this method was intended to expose the nature of the pit dug for the interment. However, on the west side of
the adult burial, upon excavation it was discovered that another burial was present. As Dr. Gehr uncovered this newly discovered burial it proved to be the remains of a young child. While Dr. Gehr was working, Dr. Eisler and Mr. Siaoai Soa completed the excavation of the adult, finding a cowrie shell at the apparent approximate location (in life) of the lower abdomen (Map 2).

Excavation continued through the day with many visitors: ASPA Executive Director Abe Malae, and Project Manager Wilfredo Carreon, and archaeologists David Herdrich, Rod Brown, and David DeFant. As they left, members of the construction crew took their places as observers, and stated again that they wished the burials were covered or removed. Next came the neighborhood residents, as school dismissals allowed. Moms and kids, toddlers and puppies, all came to observe, climb on the dirt piles, hear about what we had found, and otherwise contribute. At the end of the day they, in fact, provided the protective covers which kept dogs out of the excavation overnight.

March 24, Friday, and the excavations were readied for photographing and disinterment of the remains. By the afternoon this was completed, the excavations refilled, avoidance areas mapped and marked on the ground, and materials taken to the lab for the analysis reported below.

2.0 FORENSIC NOTES: Dentition as observed 04/26/95; Age of young individuals and the adult; STATURE as estimated from measurements of the Humerus of each individual.


2.1 CHILD BURIAL

2.1.1 There are remains from two (2.0) individuals in this burial.

2.1.2 The one we knew we were excavating was probably aged two and one-half to three years at time of death.

A. Permanent incisors are present but have no roots formed, and therefore are not ready to erupt and replace the deciduous incisors. The deciduous incisors are fully rooted and are present in their places in the mandible and maxilla. They show no resorption. The second (M2) mandibular deciduous molars appear to be in preparation for eruption, with the roots more than one-half but less than three-quarters formed. Depending on the population, the genotype of this individual, the nutritional health or stress level, degree of pathology or duration of illness, the
age at which this amount of root growth occurred can vary.

B. Incisor caries (Upper) near the gumline were present. Currently and frequently seen among children steadily nursing for their first four or five years; and, nursing while lying down and going to sleep so that the teeth are in a lactose (sugary) bacterial growth-enhancing environment.

C. Teeth are relatively unworn.

2.1.3 The remains of the other individual show it to have been an infant, probably less than but near one (1.0) year old.

A. The incisors have complete roots.

B. The deciduous molars (M1, M2) have no roots, and are incompletely formed buds consisting only of the complete enamel crowns.

2.1.4 Stature computation using regression equations and data for adults will be unreliable and not valid if applied to children; available tables are for adults, few of whom were from Polynesian populations. The apparent length of the right humerus of the nearly complete but poorly preserved two and one-half year old individual was 15.5 cm as measured in the field, in place.

2.2 ADULT BURIAL

2.2.1 There is one individual.

2.2.2 Mandibular second left molar was removed sometime in the past, and completely healed over the tooth socket.

2.2.3 Mandibular third left molar is missing its enamel.

2.2.4 Calculus/Tartar present

2.2.5 Root caries present; sign of old person with gum (periodontal) disease of some sort, caused by apparently different bacteria than those producing caries of the enamel.

2.2.6 No caries of the occlusal enamel; to be expected given the evidence of the diet as shown in the tooth wear of the occlusal surfaces. The wear suggests a prehistoric diet of high vegetable fiber content. Vegetable fiber often contains opal/silicate crystalline scrubbers which wear away the hydroxyfluorapatite (the name of the mineral of which tooth enamel is formed).

2.2.7 The individual could be 45, could be 80; Dean's best guess is that
this person is at the older end of this age range.

2.2.3 The left humerus measured approximately 29.0 cm in length; from slightly inappropriate tables not specific to but including Polynesian individuals, and stature loss related to age corrected for youngest likely age (45 yrs), the individual is minimally 153.0 cm (60.0 inches) tall in life.

3.0 FURTHER DESCRIPTIVE NOTES

The bones from the individuals described above were soft, usually only stained soil where they were not covered with sand. Both bodies were completely covered with sand from navel to head, inclusively. This conferred chemical protection by increasing drainage and reducing the acidity of the immediate environment. In spite of the sand, the best-preserved of the bone was about the consistency of damp vanilla cookie. Since the discovery was by bulldozer blade and cleated tracks, pressure crushed the skulls of the two complete individuals, reducing the readability of the image presented upon excavation.

The child had no other materials associated with it, however, the adult did have a lone cowrie shell in place at the approximate location of the navel.

Soil immediately adjacent to the longbones of the adult appeared reddened, and the sand contacting the skull of the adult was stained almost a purplish red and appeared to be slightly sticky. Samples were drawn from (a) sand; (b) stained sand; (c) reddened soil; (d) grave soil; and one charcoal sample for C14 dating was taken from the maxilla of the adult. It was suggested that the stain could be from paint pigment decorating a tapa burial wrapping (D. Herdrich, personal communication). The difference in the color noted by the skull and the color in the soil near the leg bones may be the difference accorded the pigment by the sand at the skull and soil but no sand at the legbones.

Given that adzes and adze fragments were found in soil associated with the burial excavated 50 meters to the northwest in February may mean only that work using adzes took place in the vicinity. However, adzes are tools males use, and cowrey shell is associated with women in many contexts. We hazard the proposal that the adult described in this report was a female. That she appears to have been painted, or anointed with red, or red-purple paint has not been described in the literature for Samoan burials. Red color, whether from tapa print paint from a burial wrap, or as body paint associated with the dead is a trait appearing in many cultures around the world, and has great antiquity, often interpreted as signifying lifeblood, perhaps life after death.

The bodies, adult and child, were oriented North-South, Head-Foot, and were fully extended primary burials. That two children were in the same burial probably means they were from the same family, and that the
burial area was reserved or at least known to them, and originally marked. The child burials were probably not contemporary, and perhaps were generationally separate. There is no evidence that one burial intruded on the other, but then, they were not laid out next to each other either.

In summary, the key attributes of the burials were:
(1) They were fully extended, articulated primary burials;
(2) Long axes of the bodies were oriented with the head to the north and the feet to the south;
(3) Coral beach sand covered each body from pelvis through head, inclusively;
(4) Paint apparently covered the adult body, red, or purple-red; and the child was not painted;
(5) One cowrie shell was found directly associated with the adult, probably located on the lower abdomen.

4.0 COMPARITIVE DATA

Kikuchi (1963) conducting research in American Samoa recorded that:

1. A high chief would be interred wrapped in bark cloth, mats placed under and over the body, with a layer of white sand deposited over the mats, the grave then filled with the excavated earth.

2. Alignment was with the head to the east and the feet to the west.

3. A high heap of stones was then built over the grave, one to two feet high, rectangular in plan, with the platform mound higher at the head end.

4. For other than chiefs, rectangular stone outlines or low platform covered the grave. These eventually were covered with additional layers of rock and coral as other graves were installed nearby, causing the locations of the grave outlines to be lost, merging into one large platform. (Also mentioned by Buck 1930, in Green and Davidson 1969:14).

5. Children were sometimes buried in house platforms.

McKinley (1974), from research conducted in Western Samoa, recorded a prehistoric house floor interment with no grave goods and with red earth deposited in the grave resulting in a red clay lens below and above the body. McKinley cited Buck's description that red earth was used primarily as a dye in the manufacture of bark cloth (Buck 1930:303). He further reported that red ochre was used to rub on bones exhumed from earth burials in New Zealand (Buck 1949:425), but not Tonga (Davidson 1969). His grave attribute sequence suggests red earth will be found in
graves dating from the prehistoric period to the mid-nineteenth Century in Western Samoa (1974:31).

5.0 BIBLIOGRAPHY

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MAP 2

ILI ILI MAULE TANK, BURIAL EXCAVATIONS
MARCH 22-24, 1995
SCHEMATIC PLAN VIEW AND PROFILE

CHILD:
- Sand fill
- Bone/skeletal material
- Approximate head level

ADULT:
- Sand fill
- Purple/red stain
- Conifer shell
- Bone/skeletal material
- Tufette red stain on soil and sand
- Skull: 75R 4/6

Profile view:
- M 358°
- M 178°

* When excavated, dry and one month
derel. color: 2
Hardness 3/8
PHOTOGRAPHS

Photo 1:
Overview of the excavations facing north. The child burial is on the left, the adult on the right. Watertank site preparation is occurring north of Dr. Gehr taking note of observations. White sand is visible around the adult's head. Green leaves mark the location of shovel test #1.

Photo 2:
The child burial with white sand present over head and thorax.

Photo 3:
Closeup of child mandible showing the second deciduous molar in place as the third tooth to the right of the mandibular deciduous canine with its root exposed. Examination of M2 showed it to have incompletely formed roots, indicating it had not yet erupted. Because the roots were more than halfway formed, but not yet three-quarters complete, the child's age at death was probably two and one-half years.

Photo 4:
The adult before the sand was completely removed from the head and thorax.

Photo 5:
The adult burial with sand removed from the skull. Diligent observation may reward the viewer with faint purple paint remains on the parietal bone and the adjacent sand.