

The Leluh Royal Tombs and Pre-Contact Mortuary Patterns on Kosrae Island, Micronesia ¹

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Abstract— At European Contact (1824), Kosrae was a unified polity (kingdom) and had one of the most hierarchical political organizations in Micronesia, with four hierarchical levels identified by Kosraeans and foreigners – the ruler (the *Tokosra*, *Tokosrah* or *Tohkohsrah* in modern spelling), high chiefs (*Iwem fulat*), low chiefs (*mwetsuksuk*), and commoners (*mwetsriksrik*). Its ruling center on the small island of Leluh was somewhat similar to Nan Madol on Pohnpei with some high-walled compounds of prismatic basalt. This polity and its 4-level organization has been hypothesized to extend back to ca. 1400 AD, and possibly into the 1300s, based on extensive archaeological work focused on residential patterns on the main island and Leluh. This paper provides an initial look at mortuary patterns. Oral historical and historical records identify burial patterns from 1750-1850. The rulers' remains were placed in tombs in special mortuary compounds in the center of Leluh, while high chiefs were buried in graves in their dwelling compounds. Burial rituals included exhumation of the remains of the ruler and high chiefs and their eventual burial in a reef-hole off Leluh. Archaeological data here provide evidence on burials back to the 1300s, including previously unpublished 1982-1984 archaeological work in the royal tombs in Leluh. Burial information more precisely places the formation of Kosrae's 4-level organization to the mid-1300s-1400 AD.

Introduction

Kosrae Island is a small (110 km²) high island in eastern Micronesia (5° N, 163° E) – one of only three high islands in this vast expanse of the Pacific Ocean (Fig. 1). Kosrae was the focus of a large-scale archaeological and historical research program from 1979-1985, with most projects directed or co-directed by the author and with a number of researchers involved. This work was split between the main island and the ruling center of Leluh located on the tiny island of Leluh in a northeast bay (Fig. 2). Research focused on the development of complex hierarchical societies, for Kosrae had one of the most hierarchical political organizations in Micronesia at European contact (Ritter 1981, Cordy 1982a, 1985a & 1986, Peoples 1990). It had similar hierarchies to the polities of Pohnpei and the Marshall Islands in Micronesia, and to those of Hawai'i and Tonga in Polynesia. Other research topics were also addressed, including early settlement, settlement spread and population growth over time, and subsistence.

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By 1985, we had completed six major archaeological projects and a number of small projects on the main island and five major projects on Leluh. Over 70 radiocarbon dates were processed. Brief summary reports of some initial projects within the program were published (Cordy 1982a, 1982b & 1985b, Cordy & John 1984) or presented at scientific meetings (Cordy 1983a, Cordy & Ueki 1983, Ueki 1987). Sizable manuscript final reports for the major projects were promptly prepared and placed on file with the Trust Territory of the Pacific Islands' Historic Preservation Office (TTPI HPO) (Cordy 1981a, b & c, Bath & Shun 1982, Cordy 1983b & 1984, Bath et al. 1983, Athens et al. 1983, Ueki 1984, Cordy et al. 1985), to make them easily available to researchers. These should now be on file at the Federated States of Micronesia's Office of National Archives, Culture and Historic Preservation and the Kosrae Historic Preservation Office, with some at the Pacific Collection of the University of Hawai'i's Hamilton Library. Publishing the major monographs has been a slow process. Our first main island project was published quickly (Cordy et al. 1983). It took over 10 years to get the first two Leluh projects published (Cordy 1993a). Several manuscripts are now finally being prepared for publication, including a book on Kosrae's history (Cordy & Peoples in prep.). Additionally, more recent archaeological work has been done by Athens' firm, International Archaeological Research Institute, Inc. (IARII) (Welch et al. 1990, Athens 1995, Swift et al. 1997), by Beardsley (e.g., Beardsley 2004, 2005, 2014), and by Thompson (2016), and this work has had findings relevant to the earlier research program.

The focus of prior work on complex society origins was largely on residential patterns. Some burial information was summarized (Cordy 1993a & 1985b). This paper looks more closely at traditional mortuary patterns in Kosrae, reviewing early historical observations, presenting in depth for the first time our 1982-1984 archaeological work in Leluh (notably in the royal tombs), including archaeological findings on the main island by our team and more recent work by other researchers, and analyzing recent Uranium-Thorium dates from three of the royal tombs in Leluh. The aim here is to provide another perspective on the old hierarchical society of Kosrae – a view of mortuary patterns.

Background:

Political Organization & Settlement at European Contact

A French expedition headed by L. Duperrey reached Kosrae in A.D. 1824, initiating European contact. At that time the island was unified as one polity. Duperrey and Dumont D'Urville estimated population at 2,000 – 3,000 (1828, II:637 & 1835, II: 461, respectively). Ritter's (1978, 1981) careful analysis suggests the total was 2,500-3,500 at Contact and perhaps up to 6,000 prior to 1790-1800 when a large typhoon devastated the island and caused a major famine, which "swept away thousands of people" (according to the king in 1852 who lived through these events -- Gulick 1932:503). Our archaeological work suggests a population of 5,000-10,000 before the typhoon, based on house counts, floor area, and carrying capacity estimates (Cordy et al. 1985:33-34, Ueki 1984, Bath 1984).

This population was divided into two social classes (nobles/chiefs and commoners) (Sarfert 1920a, Peoples 1990). Kosraeans, early expedition members, and later whalers and missionaries also distinctly identified four social strata (hierarchical sets of status or social rank levels): three chiefly strata – (1) the ruler (*Tokosrah*), his wives and non-adult children, (2) ca. 20 titled high chiefs (many close relatives of the king) and their families, (3) 50+ low or "petty" chiefs (land managers, titled priests, and some retainers of high chiefs) and their families, -- and (4) commoners (*mwetsrisrik*)(e.g., Gulick 1852, Sarfert 1919a & 1920a, Cordy 1993a:31-54 & 1993b). The chiefly strata were primarily formed about Kosrae's major political administrative levels – (1) the ruler who was the secular and sacred head of the society, (2) high chiefs who received their titles and community lands from the ruler (the ruler retaining control over a number of parcels), and (3) the *mwetsuksuk* or low chiefs who served as land managers for the ruler and high chiefs, with one *mwetsuksuk* over each land (*fac*). Each successive level in the hierarchy was elevated above the lower one. But there was considerable

social distance between the upper two strata and the remainder of the populace. They were the elite of Kosraean society. This was apparent in deferential behavior (such as crawling, bowing, aversion of the eyes, etc.) (Cordy 1993b), housing (huge stone-walled compounds with multiple houses) (Cordy 1993a), receipt of food tribute on a daily basis (Lütke 1835 I:380), and land ownership (Lütke 1835 I:345-6, Kittlitz 1858 I:355).

The island was divided into 50+ strips of land, called *facl*, running from the reef, across house and field areas on the narrow coastal plains and up into the mountainous interior. Each *facl* was a community with commoner households under the appointed, resident low chief. The ruler and high chiefs each controlled a number of *facl*, and they appointed *mwetsuksuk* to oversee the daily management of these lands. Each commoner household also held rights to land parcels; but there may have been no land-corporate commoner kin groups (lineages) at contact (Sarfert 1920b:58-59, Peoples 1977:40-55). Settlement within the *facl* varied in pattern. Much of the main island is steep, rugged mountainous terrain. Housing was restricted to valley floors, dry flats or hummocks on coastal plains, some flat lower ridges, sandy shorelines, and offshore islets. House sites tended to be dispersed. However, in areas where coastal plains were narrow or islets were small, house sites were densely packed in abutting compounds. Indeed, in some areas, artificial landfills extended out the shoreline or created small islets. A commoner's household had one to three structures (a few sleeping houses and a cookhouse or cooking area), sometimes within a low walled compound. Within each *facl*, the low chief's houseyard was distinguished by the added presence of a large feast-house which served as a community gathering point (Duperrey 1828:638, Lütke 1835 I:361-2 & 367, Sarfert 1919a:245).

The residences of the ruler and high chiefs were located on Leluh Island, the capital center of Kosrae. Low chiefs in the retinue of the ruler or high chiefs, priests of the deity Sikaus, and commoners also resided on Leluh. The entire flat area of this small island was densely populated. Leluh had an estimated population of 1,200-1,700 at its peak (Cordy 1993a:164-5). Leluh had some similarities with Nan Madol on Pohnpei. Over 100 named stone-walled compounds and unwallled compounds covered the flat parts of Leluh, with a canal system and/or paved paths connecting the compounds (Cordy 1993a) (Fig. 3). The bulk of the compounds were dwelling areas, and the dwelling compounds of the ruler and high chiefs had extremely high (6 m) and massive enclosing walls of basalt. Posral was the dwelling compound of the ruler. There were also two high-walled compounds in the center of Leluh containing royal tombs. Further, there were 17 sacred compounds, locations for religious ceremonies – often seasonal -- associated with major deities and presided over by priests. Most of these sacred compounds were situated close to Posral (Cordy 1993a:75-7).

Previously published work had suggested that that these *general* political and settlement patterns went back to ca. A.D. 1400 (Cordy 1981a & 1993a, Ueki 1984, Bath et al. 1983, Cordy et al. 1985). More recent analysis of our C-14 dates (Cordy & Peoples in prep.: Chapter 8) and Uranium-Thorium dates by others (Richards et al. 2015) now suggest these patterns extended back into the 1300s. Of course, details of cultural patterns did change over those years. Main island settlement patterns were similar to those at Contact, although population and settlement expanded from 1300-1800, and earlier some high chiefs may have had residences on the main island as well as on Leluh. Most of Leluh is manmade landfill, incrementally added up until 1790-1800. This landfill was extended over the reef and former reef islets starting in the A.D. 1200s (Cordy 1982a & 1993a, Athens 1995:79 141-3). The massive walled compounds began to be constructed only about the mid-1300s-1400 (Cordy 1982a & 1993a, Athens 1995:79 & 143). At that time, four social strata have been identified in Leluh's residential patterns based on labor expenditure analyses (Cordy 1993a:158-164). Oral accounts indicate Leluh (a polity probably including surrounding lands along Leluh Bay) defeated the rest of Kosrae in war (Damon 1861:59, Sarfert 1919a:251, Lewis 1949:18). One tradition says that after Leluh's successful conquest, the ruler called for stones to be brought from all over the island to build the high walls in Leluh (Sarfert 1919a:254-7). Our extensive archaeological survey work found no other site with close to the site or wall size of Leluh as a

possible capital of a competing 4-strata polity. Given this evidence, it is postulated that 4-strata organization began on Kosrae ca. mid-1300s with the unification of the island and the construction of the walled compounds of Leluh, and this society remained unified under Leluh up to Contact. Archaeological hypotheses based on work at residential sites in the southern region of Utwac suggest that from AD 1200-early 1300s a period of competing 3-strata polities (ruler-local chiefs-commoners) existed, with two of the polities roughly the size of the Utwac bay and the Leluh bay regions. These polities did not have massive ruling centers, rather population was dispersed with one community having the residence of the ruler (chief) and the others each having a residence of a local chief (Cordy et al. 1985:273-6). Prior to AD 1200, even smaller sized polities have been suggested for Utwac, centered on Finkol, Nefalil and Likihnlhlwem (Ueki 1984, Cordy et al. 1985:276).

By the mid-1850s, traditional political organization and settlement began to drastically change. Introduced diseases reduced family sizes through sterility, and greatly increased population mortality. Kosrae's population plummeted to 975 in 1856 and to a low of 300-400 in 1872-1876 (Sarfert 1919a:54-55, Ritter 1981: Table1). Many *facl* were abandoned for dwelling purposes, and people consolidated in a few communities (e.g., Ritter 1978, Snow 1860:Item 211). On Leluh, the central compounds of the site were abandoned by the 1860s, with people living only along the shore (Cordy 1993a). Missionaries had arrived in 1852, and after sporadic conversions much of the populace became Christian by 1870. Conflicts between the church and some nobles, between non-Christians and Christians, and the effects of depopulation led to the official demise of the respect behavior (*suhnak*) of the old political system in 1884, and a democratic theocracy arose, although there was a recognized king into the early 1900s (e.g., Sarfert 1920a:386-9, Schaefer 1975 & 1976, O'Brien 1979).

Mortuary Patterns of the Late 1700s-1850s: The Historical and Oral Historical Evidence

Records on traditional mortuary practices are limited from the early expeditions up to ca. 1860. A few individuals made observations on specific graves or bodies undergoing part of the mortuary process. A few summarized general mortuary patterns, based on observations or informant information. The anthropologists of the 1910 Südsee Expedition (Sarfert, Krämer, Hambruch) recorded further details from elderly informants who had lived when the old system still existed (Thilenius 1927:308-330, Sarfert 1919a:vii-ix). However, these informants were few in numbers, and some details could not be recalled or be agreed upon (Sarfert 1919a:ix, 1920b:14). Also, the 1910 material needs to be read and used carefully, because some burial practices and places present in 1910 had altered with conversion to Christianity. Lewis, an American anthropologist who worked on Kosrae in 1946-47, evaluated Sarfert and noted changes in burial patterns (1949:24-5 & 78), so his information is used here also.

I believe that the historical and oral historical evidence can be used to start to establish burial practices of the late 1700s-1850s. It applies clearly to only three of the social strata present at contact – the commoners, the high chiefs and the ruler. No references were found on practices associated with low or petty chiefs.

THE COMMONERS (*MWETSRISRIK*)

Upon a death, the family displayed signs of mourning and grief including wailing, cutting their hair short, discontinuing use of cosmetics, and sometimes frantic running about by women (Sarfert 1920b:11-12, Lewis 1949:24-25). The body was prepared by women. It was cleaned, anointed with turmeric and coconut oil, and displayed with flowers and ornaments with the head facing east. Family and friends then “gathered to sing special mourning songs for the two or three nights which elapsed before burial”, these dirges being called *tan mas* (Lewis 1949:25, Sarfert 1920b:12).

“On the death of any person, all the friends and relatives meet at the house of the deceased, where they join in singing, wailing, ... and weeping for about twenty-four hours, after which the body is buried with much solemnity”

[General comment, 1850, Leluh. (Jones 1861:131)]

After one to three days, the body was prepared for burial (Gulick 1852-57:9, Jones 1861:131, Sarfert 1920b:12, Lewis 1949:25). For burial, the corpse was wrapped in 4-5 mats, and woven cloth (*tol*, ca. 8-12 inches wide and 5 feet long) was tied at intervals along the body with special knots (the mat-*tol* preparations called *srokum*), and then it was carried to the grave (Sarfert 1920b:12, Lütke 1835,I:397, Lewis 1949:25, n.d.-a:folder 1/4, SroKum story). Here, final ceremonies occurred, and the body was placed in a shallow grave lined with mats, with the body in an extended position with the head facing east (Sarfert 1920b:12, Lewis 1949:25). “They clothe their dead in the most beautiful clothes, envelop the body with cloth, place the hands on the stomach, and bury them in the earth” (Lütke 1835,I:397, translation Ritter & Ritter 1982:131). Valued possessions were also buried with the body, and “open grave huts were erected over the grave” (Lewis 1949:25, see also D’Urville 1834,II,457, Jones 1861:131). These huts were 1.8-2.4 m x 1.2-2.5 m (D’Urville 1834,II:457).

“Each tomb is properly covered with a little hut whose sides are open. ... some mats are thrown there ... And one still finds, under some of these simple roofs elevated with care, the tools which the deceased probably used on earth, an ax [adze] for the man, and a loom for the mother of the family.”

[Lesson (1839 II:508-9), translated by Ritter & Ritter (1982:70)]

A funeral feast accompanied the display of the body, at interment, and concluded after interment. This feast was called *um srael*, relatives and friends brought gifts of food and mats to the family at this time (Sarfert 1920b:16, Lewis 1949:25). Periodic mourning at the grave site might continue long after burial (Sarfert 1920b:13).

Specific locations of commoner graves on Leluh were not described in the early journals consulted. However, main island grave locations in the vicinity of Lacl and Okaht *facl* were documented, areas near the expeditions’ anchorage in Okaht bay. Graves were solitary or in small clusters (family cemeteries) in fields just outside house areas, or next to houses (Lesson 1839 II:479, D’Urville 1834 II:457, Lütke 1835 I:397). “Very often one comes upon little villages today inhabited by the dead, for the natives of the same area like to gather their relatives in the space” (Lesson 1839 II:508, transla. Ritter & Ritter 1982:70).

In 1910 Sarfert and Krämer obtained information from elderly Kosraeans on traditional commoner grave locations on Leluh.

“Just as in Ualang [Welung – the main island] the graves were in the field, so in Lolo [Leluh] they were inside the homesteads [house compounds]. For their part, they were enclosed with special low walls. According to Krämer, the burial court was called inkaliak (from kal, “court”).”

[Sarfert (1920b:13-14). *Inkuhlyuhk* means cemetery or grave (Lee 1976:31).]

There is some discussion by Sarfert (1920b:13) whether commoner dead underwent a last mortuary step, being exhumed (*kosanon*) and buried at sea. In 1852 Gulick provided the following general comment, referring to Leluh:

“Within two or three days it is buried in a grave and left for about three months, when it is dug up, the bones carefully washed and tied together, and then sunk in a particular spot in the waters of the harbour.”

[Gulick (1944:29)]

Sarfert (1920b:14) noted that “This statement jibes exactly with the information that Krämer and I collected.” Krämer stated that a feast accompanied the exhumation, and he adds details to the actual event, “The bones of the deceased were carefully cleaned of all adhering bits of flesh that still remained, were anointed with oil and turmeric, enveloped in mats, and, tied to a stone, were sunk in the ocean from a canoe.” (Krämer in Sarfert 1920b:14). In Leluh the bones were dropped into the reef hole in the shallow lagoon between Leluh and the main island, off Yenasr, a man-made islet, in Utwa (Utwac) they were dropped in the deep spot in the harbor passage called Kepat (Sarfert 1920b:14).

This exhumation/sea burial was stated as the universal pattern by the anthropologists, yet Sarfert (1920b:14) said that while taking notes, his informants were not clear about this fact. Lewis (1949:25) emphatically states “commoners were not given a subsequent sea burial”. Rather than burial at sea, Lewis (n.d.-a:Folder 1/8, “Burial”) indicates “it was customary to bury people of a family in a common grave. After each death they dug up the remaining bones and reburied them with a new corpse.” I believe that Lewis’ conclusion is much more likely to be correct. Commoner burial on the main island – given the historical observations and soon-to-be-seen archaeological findings – show burial was in a cemetery area near other graves, and no exhumation seems to have occurred. Leluh with its limited space may have had smaller grave areas in each commoner house compound, and prior burials might be impacted by a new burial, requiring removal, cleaning and reinterment with the new burial. Gulick’s comment is associated with his observations of the display of the king’s daughter’s body (a high ranking woman), and he was likely being told that exhumation was part of royal or high chiefly burial. It seems unlikely that commoners would be buried in the same reef hole off Leluh as the rulers and high chiefs, since they were rigidly separated in life and the same would be expected in death. Thus, it is suggested that commoner burials at Contact were not exhumed and placed in reef holes.

THE HIGH CHIEFS

On the death of high chiefs, pre-burial ceremonies were far more lavish. Participants included more than just relatives and friends, but also those with status and political obligations (subjects, and fellow high chiefs) (Lewis 1949:25, Sarfert 1920b:11). The body was displayed in a house for weeks, during which time “a fire was burning constantly near it, and it was frequently anointed with oil” (Lewis 1949:25, also Sarfert 1920b:15).

“When a chief dies, they make a mummy of the body, and swathe it in coloured bandages [woven cloth called tol]. It is watched for a whole year, a fire being kept beside it, which is never allowed to go out.”

[Cooper (1880 II:267)]

Feasting during this period was extensive, and the guests might remain for weeks or months (Lewis 1949:25, Gulick 1944:29). Jones (1861:148) in 1851 noted that the *Kanku*’s (*Kankuh*’s) wife had died a while earlier, and “we found all the chiefs living on his place. They feast every day.” One funeral feast was observed immediately after the burial of a high-ranking woman. The feast took place at the feast-house in Posral. All the high chiefs attended, and baked dogs, “piles of roasted breadfruit”, “large bunches of bananas”, and a sizable amount of *seka* (kava) were prepared (Macy 1877:243).

Burial was in a shallow grave with grave goods and with a house over the grave (Sarfert 1920a:310-16, Lewis 1949:25, Jones 1861:131). Types of grave goods are not specified. The high chiefs lived solely in Leluh at contact, and their burial seems restricted to that island. The high chiefs had courtyards within their dwelling compounds in Leluh for burial (Krämer's information in Sarfert 1920b:13-14). Sarfert (1920b:14) described such an area behind the house he rented:

"[Behind the house] ... the wall enclosed family burial place was situated; in it were two graves in the form of low mounds of dirt surrounded by basalt columns that described a rectangle."

Hambruch (1919:34-32) was told of similar "old" high-ranking grave areas in Lukonlulu, Lurun, Kalung, and other house compounds in Leluh. Each was within low, coral-walled courtyards, and the graves were in a low, earth, rectangular platform area bordered by prismatic basalt columns – notably different grave areas than those of commoners.

As an aside, in 1946-47 Lewis (1949:25) was told that a mock burial of a wrapped log took place to outwit a grave-robbing spirit, while the corpse was taken secretly to one of the central tombs of Leluh. He stated that Sarfert was told this story. However, Sarfert (1919:247-8) was told by the king in 1910 that this mock burial occurred solely for the ruler and not the high chiefs. Lewis' other data argue for high chiefs' burial in courtyards within the dwelling compounds. This mock burial story for high chiefs seems to be a distortion of the story told to Sarfert almost 40 years earlier. (As will be seen, both Sarfert and Krämer believed the 1910 story was not accurate for the ruler in traditional times.)

Exhumation and sea burial were the final mortuary processing steps for high chiefs. Gulick's, Sarfert's and Krämer's general information, noted above, can confidently be concluded to apply to high chiefs. Lewis (1949:25) states that "After burial the graves were guarded until the time arrived for the bones to be disinterred, cleaned and reburied this time in the sea." Guarding was for protection from spirits (Lewis 1949:25). Again Gulick (1944:28-29) specifically recorded this information in association with his observations of the funeral house of Awane Lepalik I's daughter in 1852. (*Awane* was the title given to deceased *Tokosra*.) It was likely he asked what happened eventually to the body. Lewis (n.d.-a:folder 1/6, handwritten Mikwelung account) obtained a first-hand observation from an informant who recalled that when he was a child ca. 1880-81 the Awane Sru V's son's "bones were disinterred and cleaned and wrapped in mats and sunk off the reef at Yenasi" – an act which created a scandal in the church. Exhumation in this latter case occurred 6-12 months after burial. These exhumation events (*kosanon*) were accompanied by feasting and exchange of gifts (Sarfert 1920b:14). (Rare alternatives to sea burial did occur (Sarfert 1920b:15). Bones could be exhumed, bundled and hung up in a dwelling house. In a few cases, even burial would not occur, rather remains were kept in a house with a stone pavement around it.

THE RULER (*TOKOSRA*, *TOKOSRAH*)

It is clear that the *Tokosra* received special mortuary treatment, setting him above the high chiefs and members of his own family. No rulers' deaths were recorded by foreigners until 1854, when Awane Lepalik I died. His burial was not fully traditional due to Christian influences. He was buried in Posral compound's cemetery area in a dirt platform lined with basalt prisms (Snow 1852-59: Jan. 19, 1855 letter, Sarfert 1919a:276 Plate 45.2). He was not placed in the central tombs, and his body was not exhumed. Thus, unfortunately there are no historical accounts of traditional royal burial. However, such burial can be pieced together from the oral historical information.

First, after death the ruler was undoubtedly displayed in a funeral house in the royal dwelling compound of Posral. In 1852, Gulick (1852, 1852-57, 1944) and Clark (1852), members of the first missionary party ashore, were told of the elaborate and lengthy display for the daughter of Awane Lepalik I and observed her funeral house in Posral.

“The next house within the royal enclosure, made of high reeds and floored with the same, was where the dead body of the King’s daughter was kept, who died 3 months before. Ten women, the King himself told us, as he escorted us about the premises, watched and anointed the body, and kept a fire day and night ...”

[Gulick (1944:28-29)]

“It [the body] has been oiled with coconut oil & wound up in a coconut cord and then laid in a box, ...”

[Gulick (1852-57:8)]

This evidence suggests the king would have been treated similarly and displayed for at least the same length of time.

The most striking difference in the ruler’s mortuary patterns was the location and form of the grave site. After the period of display, the body was wrapped in mats and valuable woven cloth (*tol*) and it was taken to and interred, with unspecified grave goods, in a large, truncated pyramid-shaped, basalt and coral tomb (the *saro*) – not buried in the ground. Also, this tomb was not in his dwelling compound, Posral, rather it was one of the tombs in two special, large mortuary compounds, enclosed with large stone walls and located in the center of Leluh. These are the large compounds of Insru/Inol with four tombs and Insruun with one tomb (Fig. 3). In 1824 Lesson noted that the expedition members were not allowed in these compounds, that they had special sacredness. But he did peek over the high walls and observed a grassy compound floor and a flat-topped hill (Lesson 1839 II:496, 508). This hill was one of the tombs, to be described in the archaeology section. Lesson assumed the high chiefs were buried in these special compounds (Lesson 1839 II:496). Oral information recovered from elderly Kosraeans in 1910 by Sarfert and Hambruch clearly refute this assumption. Only the kings were placed in these tombs (Hambruch 1919:276, Sarfert 1920b:37).

Awane Sa II told Sarfert the above-noted story that these tombs were fake-tombs (Sarfert 1919a:247-8). He said that a ghost, Sepos, was reputed to wait to devour the king’s body once it was placed in the tomb. To avoid this fate, a coconut log was said to be wrapped up in mats and placed in the funeral house the day of the burial, then the log was placed in the tomb with pomp and circumstance to fool the ghost, while the king was buried in his own cemetery. Hambruch and Sarfert both rejected this tale, because bones and ornaments were found in the tombs by the Südsee expedition. They considered this story to be a recent elaboration that had arisen with growing superstitions of spirits in the abandoned central ruins of Leluh. But, importantly the story associates the tombs solely with the rulers, and that fact is consistent with the other informant information.

The rulers’ wives and non-adult children appear to have been buried within Posral. Informants in 1910 specifically stated that these people were buried in a grave area in Posral, and this area was pointed out (Hambruch in Sarfert 1919a:276). “Here the deceased women and men, with the exception of the king, were buried; he was interred in the *saro*” (Sarfert 1920b:37).

As with the high chiefs, after a period of time in which the flesh decayed, the bones of the ruler were exhumed, cleaned, rebundled and taken to Yenasr islet, where there was a sacred place. There, after proper ceremonies, the bones were dropped into the adjacent deep reef hole (Sarfert 1920a:417).

Rituals and feasts undoubtedly occurred at each step in the ruler’s mortuary processing – from display, to placement in the tomb, to exhumation and the final disposition off Yenasr – and evidently later at “stated seasons” (Gulick 1944:31). These rituals are likely to have involved virtually the whole population of the island in one fashion or another, again emphasizing the special status of the ruler. Also, since the “coronation” ceremonies of the *Tokosra* were presided over by priests, and priests were involved in other ceremonies involving the ruler (Sarfert 1920a:352-5, 405), it is probable that priests were involved in the *Tokosra*’s burial rituals. Whether these would be members of the order of Sikaus, Nosrunrap, or Sinlaku (or all of them) is uncertain.

Mortuary Patterns: The Archaeological Evidence

All burials analyzed through archaeology to date span the period from the A.D. 1300s-1800s, earlier in one or two cases on the main island. Thus, the evidence pertains to the period of 4-level political organization under an island-wide polity. In some cases, the archaeological information is contemporaneous with the records from the contact era.

THE RULER & THE ROYAL TOMBS

Archaeological work in 1910 by the Südsee Expedition identified the presence of five tombs in two central, high-walled compounds (Insru/Inol and Insruun) in Leluh (Hambruch 1919)(Fig. 3). Oral historical work by the same expedition identified these as the same compounds seen by Lesson in 1824 and by others and identified the tombs as royal tombs (Sarfert 1919a, Hambruch 1919).

These royal tombs were studied by Hambruch in 1910, Yawata in 1929, and the author between 1980-84. Hambruch produced an overall map of Leluh, which included these compounds, and he excavated in three of the tombs (Hambruch 1919). Yawata (1932a, b, 1983 personal communication to Ueki) evidently excavated the remaining Inol tomb. In our 1980-81 work, Shun remapped the entire flat, western portion of the Leluh site, including these compounds (Cordy 1993a). After extensive clearing of vegetation, I did detailed alidade plane table maps of each tomb compound, locating features and artifacts, and supervised test pit excavations in areas outside of the tombs in both of these compounds (Cordy 1993a). In 1982, we re-excavated the three tombs that Hambruch had studied, placing small test pits in each of these tombs (Cordy 1985b); and in 1984, with further vegetation clearing for the Leluh Ruins historic park opening, additional analyses of surface features in Insru/Inol occurred and test excavations were dug in the remaining Inol tomb (Cordy 1984).

The two compounds in which these tombs are located are again called Insru/Inol and Insruun. The Insru/Inol compound is in the center of Leluh. It covers an area ca. 70 x 110 m, 7,700 m² (Fig. 4). It is partly surrounded by canals. Two entrances are present in the compound, a narrow, 2.4 m wide entryway from the canal (across from the Finbota 1 dwelling compound) and a large 14 m wide southwestern entrance fronting the same canal. Directly across the canal from this entrance is a paved street (path) which led seaward to Posral, the ruler's residential compound.

The Insru/Inol compound is surrounded by one continuous wall, with no breaks or joins, indicating one building phase. The exterior facings of the front wall (with the entryways) and east wall (facing the Lurun compound) are constructed of small stacked prismatic basalt, while the back wall is of small round basalt in lower courses and small stacked prismatic basalt in upper courses. Stones in the interior facings tend to be smaller. The walls are up to 2.6-3.0 m in height, with widths of 3-5 m. The external facing on the western side and southwestern corner (along the larger pond area of the canal) has extremely large stones in the lower courses, and the corner has large uplifted, cross-stacked prisms in one of the notable styles of Leluh. The foundation edging of the compound, visible along the canals, is also in the large block basalt style at the southwest corner and west side and in stacked prismatic basalt along the canal to the south and east (facing Foton and Posral). This foundation is consistent with the wall styles and shows no breaks or abutments, which suggests it and the enclosing wall were built all in one building phase.

Within Insru/Inol are four courtyards. A central courtyard with a low wall (0.4 m high) and no entrances contains two "twin" tombs. The courtyard at the entrance contains a large basalt paving (ca. 17 x 27 m, 459 m²) with one food pounding and three kava (*seka*) pounding stones, one the largest found in Leluh (1.5 x 1.5 m), and with an associated earth oven area with fire-burnt stones. Another courtyard is to the east. These three courtyards have the traditional name of Insru. (The central courtyard is labeled Insaron on the 1910 Südsee maps; and commonly called Insaru by Kosraeans today.) A paved street runs along the west side of the central courtyard, linking the entry courtyard to a narrow rear courtyard called Inol-1. In Inol, two tombs are present, one at either end.

The exterior walls of the overall compound encompass both the interior courtyards of Insru and Inol; thus, the name used here of Insru/Inol.

The interior walls of this compound have a unique architectural style within Leluh. All are capped with flat, white coral slabs, stacked in a trapezoidal cross-section. These are different from the numerous low, rectangular cross-section walls of stacked coral slabs that are found in courtyard walls within Leluh's high ranking dwelling compounds and in habitation compound walls in the west part of Leluh and on the main island.

We had the surface of the floor and the compound walls of Insru/Inol thoroughly cleared of vegetation. The floor of the Insru courtyards was paved with flat coral stones, while the Inol courtyard had no paving; its surface was sand with water worn shell and coral. 1980-81 and 1984 surface investigations in Insru/Inol, one test excavation in Insru's entry courtyard, and another in Inol revealed virtually no food debris (shell or bone) or artifacts (only 2 adzes, 1 Anadara peeler, 1 shell ring) outside the entry courtyard indicating Insru/Inol was not a residential area. Eight surface artifacts and earth oven remnants were found in the entry compound, and some shell midden was found in the top 10-25 cm of the test unit there. Hambruch (1919:294, 296) reported a roughly carved, 40 cm high, basalt head at the entrance into Insru/Inol. It was left behind, but we could not find it during our work.

Our excavation in the center of Inol led to the conclusion that the Inol portion of the compound was built directly over natural beach. We found a 40 cm deep grey sand layer with only water worn pieces of coral and shell, and a white sand layer from 40 cm below ground surface, bgs, to the water table at 49 cm bgs, again with only water worn shell. Tomb excavations in the Inol courtyard (discussed below) also showed this same stratigraphy. In contrast, the excavations in Insru's entry courtyard and in the twin Insru tombs revealed large stone fill under the flat coral paving. Thus, it was concluded that Insru/Inol was constructed as an extension off the original Leluh island, with stone foundation edgings laid down and stone fill placed behind them extending back toward the original shore in Inol, with a surface paving of flat coral stones. All evidence points to the walls being constructed at the same time, since their architectural style is the same as the foundation edges.

In 1989, Athens (1995:104-119) excavated a 1 x 2 m test excavation (TP 5/6) within the Inol-1 courtyard, at its east end against the Inol-2 tomb's enclosing wall. In contrast to the two layers that we found above the water table, he identified one layer (I) that extended down to the water table at ca. 50 cm bgs, a very dark brown calcareous sandy loam. Below the water table was a 25 cm thick layer (II) of dark brown calcareous sandy loam and a marine sand and gravel layer (III) that was excavated down to 134-145 cm bgs. The base of the tomb's enclosing wall was found to begin 20-25 cm bgs in Layer I (profile). The depth of the wall foundations is fairly consistent with the depth of the tomb crypts. This indicates that the tombs and living surface of Inol/Insru compound were relatively shallow. No artifacts were found in this layer, also consistent with our findings. However, Athens reports shell and faunal food remains in Layers I-III, and our test unit and our water-screened tomb excavations found no food remains, only water worn shell. Athens also reports finding coral slabs 10-30 cm bgs in Layer I and coral and basalt cobbles 40-50 cm bgs, which are interpreted as possible floor pavings and fill. This is not consistent with our excavations in the center of the courtyard where no coral paving or stone fill was found. Further investigation is needed, but perhaps this end of the Inol courtyard was beyond the edge of the original beach and was filled-in with cultural deposits from nearby areas.

The second mortuary compound, Insruun, is part of a complex of compounds adjacent to Insru/Inol to the northwest (Figs. 3, 5). These compounds – Bat, Sremuta, and Insruun – share a common exterior wall and an uninterrupted basal foundation, both the wall and foundation constructed of large, round basalt stones. Large stacked prismatic basalt stones formed the corners. These walls are 4-5 m high, ca. 4 m wide and are constructed of round basalt with the upper courses tilted in from both sides. This material and the style are unlike that of Insru/Inol. Insruun is the innermost compound, farthest from the main canal. Insruun's area is ca. 80 x 80 m, 6,400 m². It has

three entrances, all faced with prismatic basalt. The main entrance faces into Sremuta compound to the southwest; the others lead back into Insruun-lan and east into Inol-3. (Inol-3 and -4 are two large dwelling compounds northeast of Insru/Inol.)

Insruun has no internal courtyards visible today, but extensive stone robbing has occurred and could have removed internal walls and flat coral flooring. Portions of the compound's walls near Insru/Inol are gone. (Much of this stone appears to have been robbed in late pre-Contact times to build the Inol-1 tomb which sits on the corner of Insru/Inol and Insruun. This tomb is intact with a basalt/coral stone fill and a coral slab façade, while adjacent walls of Insruun lack coral slabs and basalt/coral stones.)

The main features of Insruun are a tomb within a small enclosure facing the main entrance with Sremuta and a large rectangular basalt paving (17 x 27 m, 459 m²) with three associated *seka* (kava) pounding stones and one food pounding stone, located between the tomb and the entrance.

The floor surface of Insruun away from the tomb and basalt paving has very few flat coral slabs today. Gray sand with water worn coral is visible where the ground surface of Insruun is exposed. This sand layer is similar to what was interpreted in Inol as the old beach surface along the original edge of Leluh Island, and it was so interpreted for Insruun (Cordy 1993a:224-5). A close analysis of the Bat/Insruun wall in 1984 showed a step up into Insruun, with the step's foundation of larger round basalt (like the walls) retaining the gray sand within Insruun. Thus, Insruun may have been built with a foundation line laid close to the edge of the old beach, probably with some fill placed behind the foundation to level off the living surface. In two test units in the northwest corner of Insruun, between the tomb wall and west outer wall, we found stone foundation fill under a surface floor of flat coral. So it appears that stone fill was used in some places in Insruun, where the compound was constructed beyond the original beach and over the reef. Analysis of the slightly lower Bat and Sremuta compounds show that these two compounds were entirely landfill over the reef – constructed with a large foundation stone edging and stone fill behind and paved with flat coral. The compound walls of Bat clearly were abutted against and over the walls of Insru/Inol (Cordy 1993a: Fig. 167) – thus placing the construction of the walled architectural complex of Bat-Sremuta-Insruun later in time.

Unlike in Insru/Inol, Insruun's floor surface away from the tomb does contain considerable scatters of food remains (e.g., marine mollusks), and 13 domestic artifacts were recovered, all indicative of habitation activities. Our two test units found that the base of the compound wall and the tomb wall rested on top of a flat coral paving (10 and 10-20 cm below ground surface) (Cordy 1993a:215, 303-4). This was the living surface of the compound. These test units found considerable amounts of shell food remains on top and among the paving (Cordy 1993a:303-4).

The above findings indicate two common mortuary features in each compound – the tombs and the large basalt paving with associated *seka* and food pounding stones. Each compound's large basalt paving is at its main entrance. Such large basalt pavements, located at the main entrances of dwelling compounds and with *seka* and food pounding stones and earth ovens, have been interpreted through ethnoarchaeological models to be feast-house (*lom lulap*, *lohm luhlaph*) pavings in high chiefs' dwelling compounds elsewhere on Leluh (Cordy 1993a). The huge size of the pavings in the two burial compounds (459 m² vs. the dwelling feast-house ranges of 84-190 m²) point to a special feasting function, and they have been interpreted as funeral feast-houses used at least for burial and exhumation rites for the ruler (Cordy 1993a).

The tombs within these two compounds are all variations on a similar style; all are flat-topped truncated pyramids, 2.1-3.3 m high with a central crypt (Figs. 6-7). Table 1 provides measurements for each tomb. Hambruch suggested that they were built as follows, and my analysis of collapses of some facings in the Insru tombs corroborates his hypothesis.

- 1) A basal square plot was outlined on the compound floor with prismatic basalt, and coral and basalt fill was placed within.
- 2) Then a smaller basalt-outlined platform was built on top, and then another until the desired height was reached.
- 3) Last, small flat coral slabs covered the sides of the platforms, forming a sloping façade, and the flat top was similarly faced.
- 4) During this process (probably continuously), a central crypt was faced with small, basalt prisms in a stacked architectural style described elsewhere (Hambruch 1919, Cordy 1993a). Each crypt drops all the way down through the tomb to the compound's floor surface, originally paved with flat coral.

Table 1. Royal tomb measurements

Tomb	Height (m)	Basal Area (m²)	Volume (m³)	Enclosure Area (m²)	Crypt
Insrū/Inol Compound					
Insrū Tomb-1	2.6	15 x 14 m (210)	546		3.3 x 1.8
Insrū Tomb-2	2.8	14 x 13 m (182)	510		4.0 x 2.0
Inol-1 Tomb*	3.3	16 x 14 m (224)	739		2.9 x 1.3
Inol-2 Tomb**	2.6	11 x 10 m (110)	286	23 x 21 m (525)	3.2 x 1.6
Insrūun Compound					
Insrūun Tomb	2.1	13 x 11 m (143)	300	27 x 25 m (675)	No data

*Western Inol tomb.

**Eastern Inol tomb.

Additionally, Inol's eastern tomb (Inol-2) and Insrūun's tomb have enclosure walls surrounding the tomb with a ca. 3-5 m wide internal walking space around the tomb. These walls are the same height as the tomb, with a formal entrance in the Insrūun case. Hambruch (1919:286) reported a narrow entrance in the Inol tomb's wall, leading into Insrū's eastern courtyard, but this entrance is not visible today.

It appears from Hambruch's (1919:286) descriptions of the Inol-1 tomb atop the Insrūun corner that the crypt was sealed before his work. Large basalt prisms are visible on the top of the now open tombs, and they are clearly the roofing beams of the crypts. In Insrūun, these large basalt prisms are broken and lie across and in the crypt. Sealing, unsealing, and resealing the crypt during the steps in the mortuary process seem likely from this evidence.

Excavations in the tombs have yielded information on burial and grave goods (Table 2). The descriptions of Hambruch's and Yawata's tomb work are far from clear, indeed, this is to be expected, for at that time they were primarily concerned with artifacts and skeletal finds and less with stratigraphic descriptions. Stone rubble was in the crypts and had to be removed (Hambruch 1919:286-7, Yawata 1932a, 1943).

Upon opening the Inol-1 tomb atop the Insrūun corner and after clearing out the loose stone in the crypt, Hambruch removed an additional 80 cm of soil and stone until he hit the old beach surface of sand and waterworn coral pieces (1919:286). He noted that the crypt facings rested on the old beach surface. He dug 20 cm deeper. Various artifacts and bone fragments were found on the beach surface and in the 20 cm excavated below it. These included fragments of what was interpreted to be a 50-year old man (parts of the skull and mandible) and portions of a mandible and skeleton of a young dog (Hambruch 1919:291-2). Grave goods included a conus ring, 3 pearl-shell trolling lure pendants, one large Spondylus shell pendant, and 100+ small disk beads and lancet-shaped shell

Table 2. Royal Tomb Skeletal & Artifact Finds*

Tomb	Skeletal	Artifacts
Insru Tomb-1	H: none C: misc. fragments	H: none C: 1 Spondylus pendant (NG-101)* 3 Trolling-lure pendants points of pearl shell (NG-103-105) 1 Trolling-lure pendant shank in fragments (NG-106)* 1 Conus armring (NG-102)* 1 Conus top bead (NG-107) 130 Nerita beads (NG-108) 2,243 disk beads (NG-109) 1 tiny Anadara-like bead (NG-110)
Insru Tomb-2	H: none C: 4 fragments (human?)	H: none C: 20 Nerita beads (NG-111) 8 disk beads (NG-112)
Inol-2 Tomb	Y: some pieces C: 2 teeth, some fragments	Y: 2 Spondylus pendants (K-24*, P-140) 3 Trolling-lure pendant points of pearl shell (K-35) 7 Trolling-lure pendant shanks (K-14, 28, 29-32*, B-190*) 400-500 disk beads (K-47) 2 lancet-shaped necklace spreaders (K-17*, -18) 3 small, drilled Spondylus pieces (P-141-143) 3 Conus armrings (K-9, 10, 16)* 1 Tridacna armring fragment (K-13)* 5 Trolling-lure pendant shanks of pearl shell (A1-535, 541*, 544*, 550*) 1 rectang. piece of bivalve w/one side pearl-shell like (A1-451) 271 disk beads (A1-446, 447, 449, -526, 529, 531-534, 537-539, 545-547) 76 Nerita beads (A1-448, 528, 530, 536, 548) 1 Conus bead (A1-549) 1 spool type arming (A1-450)* 2 Tridacna armrings (A1-540, 542)* 1 Conus armring (A1-543)* 1 shell spool type ring (A1-527)*
Inol-1 Tomb (western)	H: parts of 50-yr. male, parts of dog C: none	H: 1 Spondylus pendant (366d) 3 unfinished Spondylus pendants (366a-c) 2 Trolling-lure pendant shanks of pearl shell (H-369a, 369b) 1 Trolling-lure pendant point of pearl shell (H-369f) 1 Conus ring (369g)* 100+ disk beads 3 lancet-shaped necklace spreaders of Spondylus (369h-j) 3 lancet-shaped necklace spreaders of Cassis (369e, other #s unknown) C: 76 disk beads (NG-113, 115) 1 unidentified bead (NG-114) 1 Conus top bead (NG-116)
Yawata's 1 st Tomb		Y: 300-400 disk beads (K-48)

H = Hambruch.

Y = Yawata.

C = Cordy.

* = Broken.

*Yawata's artifacts are now housed at the University Museum, University of Tokyo (UMUT) in Box 4 (a plastic box) (Intoh 1998). There appear to be some problems with the provenance labeling of 3 trolling-lure pendant points and 2 lure shanks. He clearly notes 7 lure shanks and 3 points in his early publications, so I have included 1 point and 2 shanks labeled as "a surface collection" and 2 points (Intoh 1998:198) as likely to be from this tomb, since their inclusion achieves his published total. Yawata did not remove skeletal material, as it was fragile (1982 personal communication to Ueki).

Cordy's collections were all left on-island with the Kosrae Historic Preservation Office. They are listed under two collections: NG (National Geographic project of 1982-83) and A1 (the general collection code for Leluh Island).

spreaders with three holes which were necklace remnants (Figs. 8-9). All these goods were important shell necklace and pendant valuables (Sarfert 1919a:83-7, 213-16, Cordy 1993a:187-191). My 1982 excavations in this Inol tomb found on the floor of the crypt a brown sandy soil among flat coral paving stones extending down 21 cm, at which point a gray sand layer with old, small coral pieces and waterworn shell was encountered. (This was exactly the same stratigraphy that Hambruch reported.) Excavation went 10 cm into this lower sand layer. This lower layer is what Hambruch interpreted as the original beach surface, which matched our findings in the 1980-81 test excavation in the Inol courtyard. The crypt facings rested on this beach surface, as Hambruch noted, and the floor of the crypt appears to have been paved with flat coral stones – the brown soil/coral layer. Also, grave artifacts were found in the brown soil and in the top 5 cm of the beach layer, the latter apparently the result of sifting down over time. We found no bone fragments in our excavations, but 76 circular shell disk beads from necklaces were found. The Inol-1 tomb work, thus, has uncovered fragments of grave goods including shell valuable ornaments. Notably, the tomb seems to have been sealed in 1910, and it contained the remnants of a male skeleton and a young dog.

Hambruch's (1919:287) work in the Insru tombs is minimally described, stating only that debris was removed with nothing found. However, our 1982 work did recover material. A 1 x 1 m test unit, with a 75 x 75 cm extension was excavated inside the crypt against its west central face in Tomb 1, and a 80 x 70 cm test unit in the southwest corner of Tomb 2. Coral rubble was removed from each crypt, and recent bottle glass found under the rubble showed the stones had fallen in since the mid-20th Century (1930s-1970s). In the two Insru tombs, wet silty sand just above and among flat coral paving stones was found under the rubble, covering the floor of each crypt. Depth of the flat coral/soil varied from 5-11 cm. Under this flat coral in Tomb 1 were found 20-40 cm long pieces of prismatic basalt and larger coral, and angular and larger coral in Tomb 2 – all remnants of the man-made fill of the Insru compound. The crypt facings rested on this fill, 5 cm below ground surface in Tomb 1 and 6-11 cm in Tomb 2. Excavation proceeded into the foundation (coral and basalt stones and the same silty sand) for 10 cm in Tomb 1 and 23 cm in Tomb 2 at which point it was halted due to water seepage. 2,381 artifacts (2,375 small disk necklace beads, 4 pieces of pearl shell trolling lure pendants, 1 Conus armring, 1 Spondylus pendant like the one Hambruch found in the Inol-1 tomb) (Fig. 10) and a few miscellaneous bone fragments were found in Tomb 1, and 28 beads and 4 bone fragments were found in Tomb 2. Again, this indicates a pattern of remnant bone fragments and shell valuable ornaments.

Yawata appears to have worked in the eastern Inol tomb (Inol-2), as he stated that he dug at the tomb next to those studied by Hambruch (Aug. 1982 interview with Ueki), and the Insruun crypt is filled with massive prisms preventing excavation. However, an earlier publication refers to the Germans having dug two tombs and Yawata two tombs (Yawata 1932b). A listing of his artifacts place nearly all into what is called the "4th tomb", but a set of 300-400 disk beads are said to be from the "1st tomb" (Intoh 1998). Unfortunately, tombs 1 and 4 are not located in his publications. It seems possible that the eastern Inol-2 tomb was the focus of his work, although this is not certain. His 1st tomb cannot be determined at present. In the primary tomb that he worked in, Yawata found artifacts and some human bone pieces on the sand floor (Yawata 1930, 1932a, b, c & 1943). He excavated slightly into the floor. Artifacts recovered were shell valuables of different types, including pearl shell lure pendants (7 lures, 3 points), 400-500 small shell disk necklace beads, and 4 armring fragments (Intoh 1998).

In 1984, we cleared the eastern Inol-2 tomb, and T. Kilafwakun of the Kosrae Historic Preservation Office found a few artifacts on the surface of the crypt floor. We then excavated a 1.0 x 0.5 m test unit in the crypt against its west facing (Cordy 1984). The floor had a 16-18 cm brownish sand layer amidst flat coral slabs to a depth of 6 cm and among small coral stones to 18 cm. This layer was over the gray-brown coral beach sand which extended down to 55 cm bgs and contained water worn shells as in the western Inol tomb and small, noncultural bivalves. The basalt prisms of the crypt's facing rested on this beach layer. Two human teeth and a few bone fragments came from

among the coral paved floor of the crypt, as did 359 grave goods including small disk beads from necklaces, shell armring and ring fragments, and pearl shell trolling lure pendant fragments. Yet again, the pattern of remnant bone fragments and valuables are evident from the finds in this tomb.

In 1983, we also inspected the crypt in Insruun. The floor is mostly covered with large fallen basalt prisms (collapse from the crypt's roof), and the few visible spots of floor were extremely muddy silty sand. A surface check revealed no artifacts.

Several results are apparent from the tomb excavations. One, each of these tombs was built on top of their compound's floor surface. The crypt descended down to that surface and had flat coral paved floors. Two, the fragments of bones tend to verify that bodies were processed through these tombs, being exhumed with fragments accidentally left behind. An exception is the Inol-1 tomb. It was sealed when Hambruch opened it, and it still contained portions of a human skeleton. Three, the bodies were laid out with highly valuable shell ornaments, some of which seem to have been inadvertently left in the crypts. Most of these ornaments were still valuables at Contact: small disk bead necklaces, pendants in the form of pearl shell trolling lures, and *Tridacna* and *Conus* armings (Sarfert 1919a:83-7, 213-16). However, the tombs' necklaces of *Nerita* beads and spool-type armings and rings were apparently no longer in use at Contact. Four, no food items appear to have been placed with the body. Virtually no food remains were found in the 1982 excavations despite 100% water-screening through 1/8-inch screens. Five, a dog was buried with one individual in Inol's western tomb.

An important consideration is the dating of tomb compounds and the tombs, as all the tombs were not used contemporaneously. During our 1979-81 work, neither the mortuary compounds nor their tombs were absolutely dated with radiocarbon dates given the lack of charcoal for dating. However, a chronology of all Leluh's compounds was made based on a variety of data (Cordy 1993a). Some additional information is now available.

Initially, settlement was along the original shore of Leluh – extending from the Katem area in the south, up to and around the Mitais area (where the Leluh Elementary School is located). The edge of this original shore along Mitais is visible in Inol and Insruun as grey sand with waterworn coral and shell. Radiocarbon dates from habitation deposits in the Katem area date to ca. BC 200-AD 200 with associated pottery (Athens 1995:78). Habitation remained only on the original shoreline approaching the AD 1200s, based on a number of dates from different locations. Athens (1995:48) obtained a shell date from his 1989 test unit against the Inol-2 tomb's enclosing wall. The date, AD 927-1234 (B-38345), comes from below the tomb's enclosing wall and the leveled floor surface of Inol/Insru; thus it pre-dates the tomb and the use of the Insru/Inol compound. What cultural pattern this date is associated with is unclear. Perhaps this is fill from nearby and earlier habitation deposits here on the edge of the original island of Leluh (Athens 1995:46). In 1984, we processed a shell date from our excavations in Insruun against the tomb wall (Sq. 1), getting a similar date of AD 960-1260 (B-8705). This was a 78g bulk shell date 20-40 cm bgs, within stone fill and below the surface paving and foundations of the tomb wall. Perhaps this date also reflects nearby, earlier settlement on the original shoreline edge of Leluh.

In the AD 1200s, it appears that man-made fill was extended out to the west over the shallow reef and reef islets of Leluh. We have radiocarbon dates from dwelling compounds nearby Insru/Inol and Insruun. Residential compounds to the north (Kosrlo, Finlas, Losr, Ketaf) were suggested to have been the first fill land on Leluh dated to AD 1250-1400, with compound foundation edges and low walls of mixed round basalt and coral. 1989 work by Athens (1995:141-9) proposed two occupations in the Finlas area – an earlier fill without walls, based on a date of AD 1220-1329, 1348-1392 from near the bottom of the cultural layers (charcoal, B-38345), and a later fill associated with the building of the surface walls, given a date of AD 1296-1586 at the base of the surface Finlas wall (shell, B-58387). However, there are now four dates from Finlas, most overlapping in the 1250-1400 period and from very different depths, probably due to crab disturbances; and as the walls and foundation

edge styles are the same, there appears to be but one construction event. Whether one occupation or two, the complex of which Finlas is a part still seems to have been the earliest fill area over the reef.

The primarily residential compounds to the south and east of Insru/Inol – across the narrow separating canal – are Lurun, Katem, Foton, Posral, Finbota and Kinyeir Fulat, and they were expanded over the reef west from the Katem area. They form an architectural construction unit – a complex of high-walled compounds – based on continuous foundations and walls without abutted joins and identical foundation and wall architectural styles (prismatic basalt). Posral's wall style is different, but it is part of this complex. Kinyeir Fulat, the westernmost compound of this complex, has immense block basalt stones in the lower courses of its exterior walls. Oral histories state that Kinyeir was once the end of Leluh, surrounded by the lagoon waters (Hambruch 1919:270). These lower courses would serve as sea walls. Carbon-dates from Foton's basal layers were AD 1410-1570 and AD 1410-1670 at 1 σ and AD 1330-1650 and AD 1280-1800 at 2 σ (charcoal, B-2725 and B-2729) (Cordy 1993a:218). A date from deposits associated with the base of Posral's high walls was AD 1310-1430 at 1 σ , AD 1240-1490 at 2 σ (charcoal, B-6,204) (Cordy 1985b). Dates from Katem's compound fill associated with its high walls were AD 1230-1452 (shell, B-58,830) and AD 1065-1384 (shell, B-58,829), and a date from Katem's pre-fill, pre-wall layer was AD 1193-1396, with a 77% probability of AD 1206-1332 (charcoal, B-31,504) (Athens 1995:78-79). These dates suggest this architectural complex was built in the AD 1400s, possibly back into the 1300s.

The Insru/Inol compound sits in the center of Leluh as a single building event (basis = continuous walls and foundations and similar architectural style), extended over the reef southwest from the Mitais area. Its walls are built in the stacked prismatic style, sharing this pattern only with the Lurun-Kinyeir compound complex. Insru-Inol is also carefully aligned with the Lurun-Foton-Finbota compounds to form the intervening canal, and Insru/Inol's main entrance faces the street running seaward between Foton and Finbota to Posral. Also, its large block basalt lower courses in the western wall and southwest corner are similar only with Kinyeir Fulat, and are located where both would have faced the sea – likely to serve as sea walls. Given all these points, it was concluded that Insru/Inol was built contemporaneously with the Lurun-Kinyeir complex, dating ca. A.D. 1400, and possibly into the 1300s. Minimal evidence of domestic or other activities outside of the entry courtyard also point to its being constructed and used solely as a mortuary compound.

Insruun initially was a dwelling compound as part of a walled compound complex with Bat and Sremuta with large, round basalt walls and foundations. Oral history notes this original residential use of Insruun (Sarfert 1919a:44, 1920a:321-2), and this would explain why archaeological work found abundant food remains and domestic artifacts. This complex was extended off the original Mitais shoreline adjacent to Insru-Inol. The Bat wall was found to abut and overlay the Insru wall, so clearly this complex was later than Insru-Inol. This is consistent with its very different style of wall architecture (large round basalt). The walls and foundations of the Pensa compound complex to the west and of Inol-3 and -4 in Mitais inland of Insru/Inol also shared the large round basalt architectural style. All these round basalt compounds are undated, but it was hypothesized that they date ca. A.D. 1600-1650, predating farther extension of Leluh to the west where very low-walled compounds are present and where processed radiocarbon dates range 1650-1800. The oral histories indicate Insruun was converted to tomb use and then was abandoned for such use after the typhoon of 1790-1800, which severely damaged Insruun's tomb. Thus, it seems possible that Insruun was converted to tomb use in the late 1600s or in the 1700s.

A tomb sequence is hypothesized as follows. It was argued in our early publications based on residential studies that Insru/Inol compound and the twin Insru tombs were built ca. A.D. 1400. More recent analysis of our C-14 dates indicate possibly they were built back into the 1300s. It is also argued that ca. A.D. 1300-1400 the twin tombs in Insru were the only two present. They form a planned, central unit. The eastern Inol-2 tomb is suggested to have replaced these tombs later, being built in the back eastern corner and walled in. Then, it is suggested that mortuary activities were shifted to Insruun, possibly in the late 1600s-1700s, perhaps because no floor room was left in

Insru/Inol for further tomb construction. The Insruun tomb is also walled-in, a style shared only with the Inol-2 suggesting possible closer chronological links. Insruun's use as a dwelling compound ended at this point. Next, oral history states that a large typhoon hit the island ca. 1790-1800 and Insruun's tomb's roof collapsed at that time, making the tomb unusable (Hambruch 1919:285). The Insruun tomb was abandoned, and it is suggested the western Inol tomb was built on the corner wall of Inol-1 and Insruun. The Inol-1 tomb clearly was the last used, having still been sealed in 1910 with major skeletal remains within. Also, it is built atop the corner wall of Insru/Inol, and part of the walls of Insruun (and probably its floor paving) were torn apart and removed, likely to supply stone for the Inol-1 tomb.

In 2015, Uranium-Thorium dates were presented for coral construction material from the twin Insru tombs and the Inol-1 tomb (Richards et al. 2015). The likely dates for the construction of the twin Insru tombs were $AD\ 1322 \pm 4.8$ years and $AD\ 1387 \pm 6.5$ years, $AD\ 1312-1332$ and $AD\ 1374-1400$. These dates are consistent with the early part of the $AD\ 1300s-1400$ C-14 ranges hypothesized for the construction of Insru/Inol and the Lurun-Kinyeir complex. They appear to refine construction to the 1300s. The Inol-1 U-Th date considered likely for its construction was $AD\ 1311 \pm 6.5$. However, this date is unlikely to date the tomb's construction, which oral history suggests should have been built after the 1790-1800 typhoon and which was the last tomb in use in the initial European Contact period. Rather the date appears to be dating much older coral present in the area, which was old when used for the floor paving and walls in Insruun. Later, the coral and basalt stone from Insruun's floor and walls were robbed likely to build the Inol-1 tomb. Thus, the coral in the Inol-1 tomb was re-used material, with the coral's death much earlier in time than the building of the Inol-1 tomb.

Again, the Inol-1 tomb was still sealed when Hambruch opened it (Hambruch 1919:286), and it contained a man's skeletal remains, which had not been exhumed and processed along to the reef. Grave goods included no foreign items. It would appear that this individual was the last placed in the tombs. Who might he have been? When Duperrey and Lütke were on Kosrae in 1824 and 1827, Awane Salik was the ruler, being very old and feeble. He soon died and was succeeded by his younger (but probably not much younger) brother, Awane Sru I, who likely died in the early 1830s. Neither of these rulers' burial was recorded by foreigners, but undoubtedly they were processed in a traditional manner, through the tombs and out to the reef-hole. Awane Sru II succeeded his father in a contested succession and ruled until 1837 when he was deposed in a coup led by his nephew and contender (the Salik)(Sarfert 1920a). Awane Sru II died later in disgrace and was not buried in the tombs as a king. The Salik died from wounds during the coup, and his brother became the *Tokosra* (Awane Lepalik I). Awane Lepalik ruled from 1837-1854 and was the king documented in the early whaling and missionary literature (often called King George). Rev. Snow observed his burial in the Posral earthen grave platform, not in one of the tombs and buried within a month of his death (Snow 1852-59: Letter of Jan. 19, 1855). This was a major deviation from two years earlier when traditional practices were still followed. Rapid changes were ongoing on Kosrae at this time. Rev. Snow had arrived in 1852 and was pushing for "Christian" behavior, and Lepalik frequently tried to please him. In these years, many religious activities on Leluh had been discontinued, or were infrequently carried out (Lewis n.d.-b:78-9). Lepalik's son became *Tokosra*, Awane Sru III, in his 20s ruling from 1854-55. He was anti-mission, and he attempted to revive older practices. His burial location is unknown. The next ruler (Awane Oa – Lepalik's half-brother) was strongly anti-mission, as was his successor. If old mortuary practices still existed, he should have been interred in a royal tomb when he died in 1858. He was not. Instead, he was buried in a coral-walled burial courtyard in the house compound of Lurun (where he lived before he was king) (Hambruch 1919:279). Hambruch excavated his grave, finding fragile articulated skeletal remains and foreign, metal grave items. Thus, traditional burial of the king in the tombs and exhumation had ended by 1858. This seems indirectly supported by Snow's letters. Snow was attuned to unusual religious activities (other than constant feasting) through his observations and informants, and he made no mention of tomb burial, exhumation, or transport of

bodies to Yenasr (Snow 1852-59, 1859, 1860-71). Given the above, the only likely candidates for the skeleton in the Inol tomb would seem to be Awane Lepalik or his son, Awane Sru III, and Awane Lepalik only if his remains were secretly moved later from Posral to the crypt, which seems unlikely since his grave in Posral was pointed out to the Südsee Expedition in 1910 (Hambruch 1919:276, Sarfert 1919a: Plate 45.2). Whoever this was, in those changing times, exhumation and transport to the reef-hole did not take place. (The young dog found with the body may reflect early re-introduction of dogs; they were eaten in feasts by 1850. Or perhaps dogs were present at contact, and they were just not seen by the expedition members. Athens (1995) has found evidence of dog present through much of pre-European times.)

YENASR ISLET ON THE EDGE OF THE REEF HOLE

Yenasr islet is on the reef flat 500 m north of Leluh island. Here, at contact, exhumed bones of the ruler and high chiefs went through final rituals at this sacred place before being deposited in the adjacent reef hole. This man-made islet is roughly L-shaped, and portions are heavily eroded. It was sketch-mapped and surface inspected in 1981; in 1983 a test unit was excavated, and in 1984 we plane table mapped the islet and further analyzed its surface (Cordy 1993a, 1984). The islet's ocean-side edge was also stabilized in 1984 to reduce future erosion. The islet is 56 m long and 20 m wide, with the L-extension being 16 x 12 m, an area of approximately 1,312 m². Its foundation edges were medium, round basalt, and the surface was paved with flat coral.

The surface of Yenasr had earth-oven stones, turtle carapace fragments (by far the largest amount seen on the surface in Leluh), shell food remains, and numerous rectangular chunks of *Tridacna* hinges (often 20 x 20, 30 x 30 cm) that appear to have been initial adze preforms. Closer analysis also identified *Anadara* food peelers and *Tridacna* rim adze preforms. (In 1984 the ocean-side shore was marked off in 5 x 2 m blocks, and three adjacent blocks were surface collected – recovering all preforms, waste material, and unmodified raw material for future analysis by a lithic specialist.)

Our test unit had man-made islet fill to its base, 105 cm bgs, atop the natural reef sand and reef platform. Layer Ia (1-10 cm bgs) was a light gray sand mixed with the flat coral paving of the islet's surface. Layer Ib (10-40 cm) consisted of the same light gray sand with islet fill material. Layer II (40-105 cm) was a continuation of the small to large coral stone fill, but with brownish sand. Considerable shell food remains were present, with much of the shell burnt. Fire-burnt rocks were also present. Layer Ib had very ashy sand with charcoal. Burnt shell greatly reduced below 70 cm.

These findings suggest Yenasr was used for two main activities: the initial stages of adze manufacturing and food preparation/consumption (oven stones, ashy soil, food remains – burnt and not, *Anadara* food peelers, turtle carapaces). The fact that turtles were apparently prepared and eaten here suggests ritual feasting activities, as turtles were a sacred animal (Cordy 1993a:198). It seems possible that these feasting activities were associated with the final interment of the bones of the high chiefs and rulers into the adjacent reef hole. (The linkage of adze making to ritual activities, if it was linked, is unclear.)

The chronology of Yenasr is still not certain. Its foundation edges of medium round basalt are similar to the islet of Pisin and compounds at the west end of Leluh. In 1980-81 dates from these areas fell into the 1650-1800 range (Cordy 1993a:231-2). Pisin was recalled in oral accounts as being built more recently, perhaps in the 1700s (Sarfert 1919a:44). In 1982-83, we dated more compounds in western Leluh. A test unit on Pisin had a date of AD 1570-1750 from charcoal within the islet's man-made fill (50-70 cm bgs) (Beta-6200, 290 ± 90 BP). Two samples from Yenasr gave dates of < AD 1820 (Ib:20-40 cm bgs, charcoal) (Beta-6208, < 130 BP, 2σ) and < AD 1770 (II:70-105 cm, burnt shell) (Beta-6209, < 180 BP, 2σ), but these seem very recent. More dating is needed. At this point, we are not sure when Yenasr was constructed.

ANOTHER TOMB IN THE KARENGSE/KEFAL COMPOUND

Hambruch described another truncated pyramid tomb in Karengse/Kefal compound in Leluh and excavated it (Hambruch 1919:283, 287). His description, however, is limited. It was very low and said to be a “collapsed”, “formless pile” in 1910. Our analysis of this area in 1981 found a walled enclosure, similar in some ways to the tombs of Insruun and Inol-2. Our time was too limited to clear the interior and evaluate any structure that was present.

Hambruch’s excavations yielded pieces of one shell armring and another shell ornament and some human bone fragments (1919:296). The artifacts and tomb form both suggest this was a pre-1850s burial. The remains seem to have been exhumed. I have noted elsewhere (Cordy 1993a:232), purely as a speculation, that this tomb might have been built ca. 1837 by Lepalik to commemorate his brother, the Salik, who would have become king had he not died of wounds during the coup. The Salik lived in Yarkaf, adjacent to Karengse/Kefal (Sarfert 1920a:379-82).

HIGH CHIEFS’ BURIALS

Hambruch mapped and described graveyards in a number of high chiefs’ dwelling compounds in Leluh – Lurun, Katem, Posral, Kefo, Yefokfasr, Kinyeir Fulat, Kinyeir Srisrik, Lukuonlulu, Pensa, Yesraku, and Innatok (1919:270-79). In 1980-82, Shun and I mapped and described some of these compounds and their graveyards, and we also found and described “older appearing” graveyards in Finlas-3 and Motonte. Our work clearly showed that some of the graveyards described by Hambruch in 1910 had been built after abandonment of dwelling compounds in the 1860s and thus were not traditional in age. The Yefokfasr cemetery’s walls extended over and beyond foundations of the old dwelling compounds’ boundary walls, post-dating those walls dismantling (Cordy 1993a:199-200). A similar graveyard with a 0.9 m-high, flat-stacked coral wall was found in Finlas-3 built across abandoned dwelling compound boundary walls (Cordy 1993a:200). An informant told us this graveyard was built ca. 1920 by his father (Irving Macwelung 1980, personal communication). Motonte’s cemetery is surrounded by a similar low coral wall.

In contrast, other grave areas were clearly part of the original house compound construction, not being built over walls. These grave areas within high chiefs’ dwelling compounds were enclosed small courtyards, with coral walls. Lurun’s wall was 1.5 m high and Kefo in Posral’s was 1.5-2.0 m high (Hambruch 1919:276, 279). Within these areas were low, rectangular earthen platforms, lined with prismatic basalt (1-3 stones high). These were the actual burial plots. These grave types were in use in A.D. 1854 when Awane Lepalik was buried in such an area in Kefo within Posral and in 1858 when Awane Oa was buried within Lurun. It would seem to be an old pattern. This is reinforced with Lukonlulu, Kalung and Katem data. Here prismatic basalt-lined grave plots were enclosed within coral walled courtyards and were “old” in 1910 (Hambruch 1919:274-8, Cordy 1993a:199-200).

Only two of these “older” grave platforms have been excavated. In 1910 Hambruch (1919, 279-280, 291) dug at three known graves in Lurun, one being Awane Oa’s, who died in 1858. Articulated remains were in each grave, in extremely fragile condition. In Awane Oa’s grave there were grave goods: nails, a ship’s lantern and fragments of other metal objects. In our 1982 field season, Shun excavated a test pit in Kalung (a high chief’s dwelling compound) and uncovered an earthen platform lined with prismatic basalt. The small area excavated contained one individual’s remains, that was buried extended with a food pounder and a mid-1800s clay pipe.

In sum, the data suggest that burials of high chiefs were within their dwelling compounds in a coral-walled enclosure or courtyard with the grave area itself being a low earthen platform lined with prismatic basalt. Probably they were buried with shell valuables, since only the ruler and high chiefs wore trolling lure style shell pendants and had access to sizable amounts of shell valuables (Lesson 1839 II:505, Sarfert 1919a:85). Excavations in such graves are extremely limited at this point, with the only two cases uncovering skeletal remains from the post-1850s. Historical information indicate that in the late 1700s-1850s, exhumation of high chiefs’ remains took place, and this is expected for

earlier times. Given the findings in the royal tombs, fragmentary pieces of skeletal remains and shell valuables dating 1400-1850 would be anticipated within these high chiefs' grave platforms.

LOW CHIEFS' BURIALS

At present, we have not found any burials in dwelling areas in Leluh (the west end) or on the main island that have been interpreted to be associated with low chiefs.

COMMONER BURIALS

In Leluh only one clearly older burial has been found in commoner dwelling sectors. In 1983 in the Lik area – a flat area fringing the north side of Leluh's hill, on the land of Alik Alik – Shun uncovered a pit burial in sand deposits. Leg bones were found at 31-38 cm bgs. The excavation unit also yielded fragments of the eye orbit, traditional artifacts (19 disk necklace beads, a shell peeler), non-traditional artifacts (a button, glass, metal), and indications of considerable disturbance. A radiocarbon date on *Strombus* shells (28-45 cm bgs) was AD 1650-1890 (Beta-8347, 180 ± 60 BP). A small modern cemetery with a few cement graves and headstones is present less than 10 m away, so the remains in our test unit suggest the cemetery area was once larger. (Note: Some shell disk necklace bead valuables in commoner burials would not be surprising, since at Contact, payments in shell valuables were made to commoners by chiefs for unusual services – Sarfert 1920a:364-5, Peoples 1977:55, 80-2.)

This pattern from Lik is quite similar to that found at *Wiac facl* on the north shore of the main island. There, along the sandy shore, dwelling deposits were excavated in 1979 (Cordy 1981c). Most of the upper deposits date back to the A.D. 1400s. Informants told us that each family along this strand had small grave areas (cemeteries) which had been used for many years. In 1979 these were fenced with small cement graves inside on the surface. In 1980-81 construction grading for quarry use sheared off the upper third of deposits of most of the *Wiac* shoreline. Thus, a rare extensive view of the *Wiac* deposits and associated activity patterns exists for post-1400 times, outside of the known family cemetery plots which were not touched. Strikingly, skeletal remains were found, but only very near to the modern family grave areas. One case of a deep (ca. 1-2 m) pit burial uncovered solely pre-contact artifacts (a food pounder and *Tridacna* hinge adze). Thus, these *Wiac* burial areas extend back into pre-contact times, with each small cemetery area being slightly larger than the modern fenced cemeteries. Further, the burials found without cement markers had no non-perishable burial features other than near unidentifiable pits. All the burials were articulated and apparently extended. As pre-contact remains were present, one can conclude that exhumation and burial at sea did not occur.

Work in *Tafunsak facl* to the west of *Wiac* along the sand shore found highly disturbed graves, in TP 5, 6 & 8 (Athens 1995:169, 172, 187). In TP8 bone fragments (cranial, ribs, vertebra) were below a layer dated 1416-1529. These finds also suggest pit graves with unexhumed skeletal remains.

Rare burial finds have occurred in other locations on the main island. A burial was found in sand at site C8-2 in *Nefalil facl* in the southern *Utwac* area (Athens et al. 1983, Test Excavations:19). This site was on a loamy sand islet in the mangroves (Islet A) – either a man-made islet or a natural islet retained by stone facings. The burial was in a large, low-walled dwelling compound. Test excavations uncovered skeletal remains within a shallow, oval pit capped with basalt stones. Dates for the layer that the burial was associated with place it into the 1800s.

In *Lela facl* in Malem on the eastern shore on a sand barrier islet, skeletal remains were found within a habitation compound (portions of an occiput, maxilla with a tooth, upper humerus) (Swift et al. 1997:26). These had been brought up by crab activity. A reburial pit nearby found two teeth at a depth of 30 cm. These fragments also indicate unexhumed remains within habitation compounds.

In *Tepat* on the northwest shore of *Welung* in an alluvial soil area on the edge of a mangrove swamp, we located a rectangular earth-filled platform (D12-4), ca. 10 x 8 m and 50-70 cm high.

Nearby were house sites. Informants identified the platform as a small cemetery (Cordy 1981c:115-127). The oral information places this structure's use as a commoner cemetery back to before the late 1870s. It may be a post-1850s grave feature, but it is possible such a structure may reflect an older type of family burial plot in wet soil contexts.

In Lacl near Okaht bay in the northwest Welung area of Tafunsak, a low platform within a dwelling compound (Feature 2) was identified as a possible burial (Welch et al. 1990:148). This platform was 7.5 x 4.8 m in area and 80 cm high with a depression. House pavings were nearby. The possible grave was not excavated, nor was oral information obtained suggesting it was a burial, so it is not yet confirmed as a burial.

More recently in 2014, sand-mining disturbed skeletal remains in the Yekula shore area of Wiac, apparently uncovering portions of entire bodies (at least crania and long bones) (Thompson 2016). At least four individuals were identified from skulls and teeth, ranging in age from 6-7 years old to adults. Also, a shell arming and small disk beads were found with the remains. One cranial fragment was C-14 dated to AD 1635-1685. An "initial morphological assessment of the bones" suggested considerable breakage of the long bones, possibly prior to burial. It was suggested that these remains were placed in an open pit and possibly reflected cannibalism. However, without controlled excavation in an undisturbed context and given the presence of shell valuables and remains of all ages, it is possible that these were a typical small cemetery of burials in sand as found in western Wiac and Lik on Leluh and may reflect comingling of remains due to impacts on prior burials by later burials, as well as sand-mining. Full osteological analysis of the bones is needed before making conclusions on cannibalism.

A final feature of interest was from Israc *facl* in Utwac. Here two habitation enclosures (C9-10) were found on the seaward edge of a narrow coastal plain (Athens et al. 1983, Israc to Yemuhlil: 14-21). Enclosure A had 1.2-1.5 m high walls, up to 2.2 m at the corners, and was recognized by the field crew as a striking, more labor intensive compound. Inside were two rectangular house pavings with 2-3 *seka* and food pounding stones. Behind one paving was a 7.5 x 8 m rectangular platform, 1 m high, with some basalt prisms in its facings. A rectangular crypt was open in the center. Informants stated that the crypt was opened in the 1930s and contained a food pounder, adze, and a necklace (probably of shell disk beads). No mention was made of skeletal remains, but they considered this a burial. Excavation of the southern half of the crypt found no artifacts or skeletal remains. A soil layer in a paving in front of the platform dated to AD 1405-1665 (Athens et al. 1983, Test Excavations:21-22). This crypt feature, if a burial, with its more impressive compound walls, crypt and shell valuables might be that of a low chief.

Ignoring the Israc case, this evidence, spotty in many areas, but more detailed in Lik on Leluh and in Wiac in Tafunsak, indicates commoner burials in house compounds or near house areas. The Lik and Wiac cases clearly are small cemeteries. The skeletal remains are articulated or complete but disturbed, supporting the hypothesis that exhumation and reburial in reef holes did not occur for commoners. But there was some comingling of remains in Lik due to later burials impacting prior burials. These were pit burials with some grave goods related to activities in life. Again, the Israc case seems different and might be a glimpse at a low chief's burial.

Conclusions

Oral historical, early historical and contemporary archaeological data supply an initial picture of burial patterns associated with different social strata from the 1750s to the early 1850s. Briefly, these are:

Ruler: Lengthy display within a house in the royal dwelling compound of Posral in Leluh. Burial (wrapped in mats and valued woven cloth and with shell valuables) in a crypt within a large tomb located in a special high-walled, sacred mortuary compound in the center of

Leluh. Later, exhumation and cleaning of bones and final deposit of bones in a reef-hole off Yenasr Islet. Ruler or heirs occasionally built new tombs. Mortuary ritual was elaborate in the Posral display (with feasting at the feast-house of Posral), at the mortuary compounds (seen by large feast-houses and pounding stones), and at Yenasr Islet (where turtle and other food were prepared), probably with priestly participation. Feasting with sizable amounts of breadfruit, bananas and seka accompanied these rituals.

Ruler's Family & High Chiefs: Lengthy displays in funeral house within their high-walled dwelling compound in Leluh. Burial (wrapped in mats and woven cloth, and probably with shell valuables) in coral-walled courtyard within dwelling compound, in low rectangular earthen platform, lined with prismatic basalt. Graves covered with wood-and-thatch houses. Later, exhumation, cleaning of bones, and deposit in reef-hole off Yenasr. Mortuary rituals elaborate with feasting at feast-house in dwelling compound and later at Yenasr.

Low Chiefs: Uncertain grave and burial practices. Probably with more time and labor in burial rites than commoners. Low chiefs were appointed by a high chief and had a *facl*'s population under them that gave some respect behavior, food, feasts, and servants (Sarfert 1920a:361, 364, Snow 1860-71: Letter of July 24, 1860). Status obligations, thus, existed that would suggest more participants, and time and labor, in burial rituals than in commoner burials.

Commoners: 1-3 day display period. In sand areas on Leluh and on the main island, pit burial in family grave areas near dwellings (wrapped in mats and woven cloth). In alluvial areas on main island, graves in soil or possibly in low platforms. No exhumation based on current archaeological evidence. Small wood-and-thatch huts covered the grave, and minimal grave goods (adze, food pounder, looms). Mortuary rituals smaller scale with fewer participants.

These mortuary patterns show ranked labor expenditure differences among the strata as would be predicted by archaeological mortuary studies elsewhere in the Pacific (e.g., Tainter 1973, Kirch 1980, Cordy 1981d, Spennemann 1989, Burley 1998, Cordy 2012). Labor expenditure differences are visible in ritual duration, extent of processing and number of participants. Such differences are also visible in the grave features, with the ruler's grave features (tombs in special mortuary compounds) standing far above the other strata.

These are initial ideas on traditional mortuary patterns. Tentatively they can serve as a model for burial patterns back to the mid-AD 1300s/1400, given archaeological evidence. But this is not to claim that burial patterns were the same for 450-500 years, from the mid-1300s-1850. Surely elements of burial changed, just as aspects of land organization, population, and settlement density changed. For commoners, based on archaeological burial patterns back to AD 1400, pit burials in family cemeteries near houses and the lack of exhumation seems an enduring pattern. So too was the burial of the ruler with shell valuables in a truncated pyramid tomb in a special burial compound in the center of Leluh. Archaeology shows that the Insru/Inol compound with its twin tombs was built in the mid-1300s, when the large walled dwelling compounds of Leluh were built – just after Leluh unified the island and 4-level hierarchical organization began. A sequence of use of different tombs and mortuary compounds followed, possibly with some change in shell valuables. The kings also seem to have been exhumed from the mid 1300s-on, given the empty tombs and skeletal fragments. For high chiefs, the model would predict that many of their grave platforms in their high walled dwelling compounds were built when the compounds were built (starting in the mid-1300s), that only some skeletal and shell valuable fragments should be found dating up to the 1850s (as evidence of

exhumation), and that articulated skeletal remains should date after the 1850s (after exhumation practices ended with Christianity). Very limited excavation in high chiefly graves has occurred to date, uncovering post-1850 extended burials. Evaluation of earlier times would require excavation in some of the high chiefs' grave areas. If some future researcher wishes to follow up on this concern, close coordination with the landowner and community are needed, to see if excavations would be acceptable and, if so, to develop appropriate excavation and skeletal treatment approaches.

One question is when Yenasr was built? Was it built in the mid-1300s as an islet for ceremonies before the exhumed bodies of the ruler and high chiefs were sunk into the adjacent reef hole? Or was it built later as a new ritual development? Or does it pre-date the rise of Kosrae's 4-strata polity? Better dating is needed for Yenasr, perhaps U-Th dating of its coral construction material. Also, was the reef-hole itself used as a final cemetery in the mid-1300s? Analysis of potential underwater features and remains might shed some light on this question.

This in turn leads to questions about burial practices before the mid-1300s. These patterns are unknown at present. This was a period with several 3-hierarchical level, competing polities (1200-early 1300s, given current hypotheses – Cordy et al. 1985). Were rulers and local chiefs buried in the same manner as post-mid-1300s times? No truncated pyramid tombs have been identified outside of Leluh's post-mid-1300s tombs, so the rulers' graves are likely to have looked different. Was chiefly exhumation an old practice? Perhaps the oral stories of deep reef burial spots in the once powerful region of Utwac, as well as in Leluh, suggest this. If exhumation and reef burial was an older practice, then with Leluh's unification of the island ca. the mid-1300s, the special mortuary compounds and tombs for the Tokosra seem to have been a new development to further elevate the leader of Leluh (now the leader of all Kosrae) – along with the construction of the high-walled dwelling compounds to reflect the respect, power and renown of all the elite. Other possibilities certainly exist and await future research.

We were just beginning to turn attention to mortuary studies at the end of our Leluh work in 1984. More information is needed on pre-1700s burial practices on Kosrae. These can tell us a great deal about the development of complex societies and life in the past. However, mortuary excavations often are sensitive and need careful approvals. Much future information may actually come from accidental finds. It is important to record these finds as best as possible, and when feasible to eventually process radiocarbon dates from associated, non-skeletal material.

Regardless, we do know that for all Kosraeans at least in the late 1700s-1850s, burial was an end-point of life. The spirit of the deceased (*ngang*) was believed to travel east to “the realm of souls (*Mila*)” on another island called Jipan (as spelled by Sarfert), believed to be in the Marshall Islands area (Jackson 1849:10, Sarfert 1920a:323, note 2, 1920b:18). But the spirits also could return after a period of time and impact daily life in good and bad ways. “Illustrious dead” (“*anut*, spirits”) were “more or less operative in the interests of their descendants. They must be respected” (Gulick 1860). In a highly hierarchical society, respect, grief and mourning were shown differently for those in the different levels of the society. The ultimate respect is seen in the burial of the ruler. He was laid in a crypt in one of the tombs in the mortuary compounds of central Leluh. His body was wrapped in fine mats and elaborately decorated woven cloth, and shell valuables (necklaces of disk beads and pendants) were placed with the body. After a period of time, the body was exhumed, the bones were cleaned and rewrapped, were taken to the sacred place on Yenasr islet for rituals, and underwent final burial in the reef-hole off Yenasr. Today, only fragments of bones and grave goods survive in the tombs, but these, the tombs, the burial compounds, Yenasr and the reef-hole all are vivid reminders of the hierarchical Kosraean society of the past – equally as much as the high-walled residential compounds of Leluh.

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Notes

Kosraeans have had different orthographies, or ways of spelling their language, over the years. One was the American-Hawaiian missionary system established in the late 1800s. When I was on Kosrae in the 1970s-1980s, adult Kosraeans spelled using this system. This was the form that I learned. In the 1970s, the United States' bilingual educational program began on Kosrae with a new Kusaiean-English Dictionary (Lee 1976) in the University of Hawai'i's PALI Language series, which used more symbols for sounds in words. School children began to be taught this system. But even simpler forms are commonly in use – Tokosrah vs the dictionary's Tohkohsrah. Attempts have been made by myself and other anthropologists to use modern spellings – such as Leluh vs Lelu, Tacf vs Taf, Utwac vs Utwa. Additional problems arise when using the German Südsee volumes, where words were spelled differently again, and many of these key words do not appear in the modern dictionary. Here I have used modern spellings of place names that Ritter and Ritter (1982:xiv) presented on a map of Kosrae. In other situations, I often have had to use Sarfert's German spelling and older missionary system spelling. Regardless, most Kosraeans will be able to rapidly figure out the pronunciation.

Radiocarbon dates here are presented as they were originally reported. Most were processed from 1981-84, prior to large scale use of C13/C12 fractionation and calibration. This changed in 1985, when standard fractionation and calibration became common (e.g., on Kosrae starting in Cordy et al. 1985). Thus, many dates presented here are uncalibrated, but are not markedly different from calibrated dates. The charcoal dates presented also preceded charcoal species identifications, so it is unknown if the charcoal reflects short-lived plant species. Athens (1995:122) has discussed shell dates without ocean reservoir correction or adjustment for isotopic fractionation, and he stated that “dating experience in Micronesia has shown that the latter two factors pretty much cancel out one another for marine shell” and “the ‘raw’ radiocarbon determinations can be utilized as reasonable calendar age estimates” (Athens 1995:122). Thus, I have used the “raw” determination for our earlier shell dates here.

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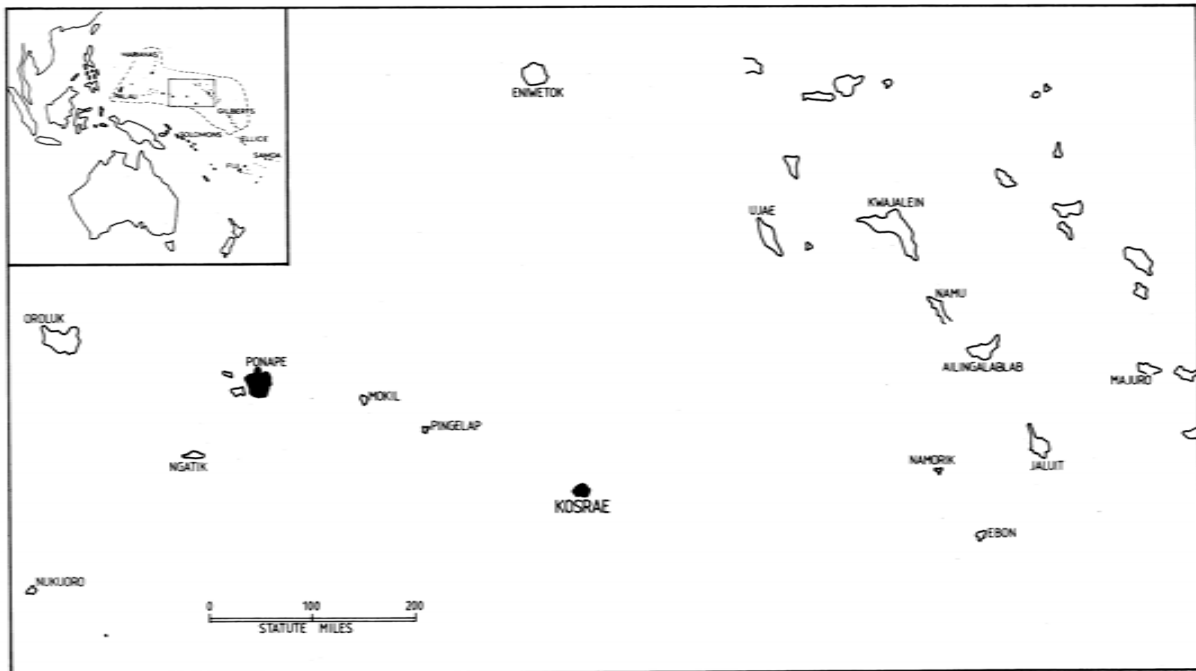


Figure 1. Kosrae's Location In Eastern Micronesia (Cordy 1993:Fig. 1).

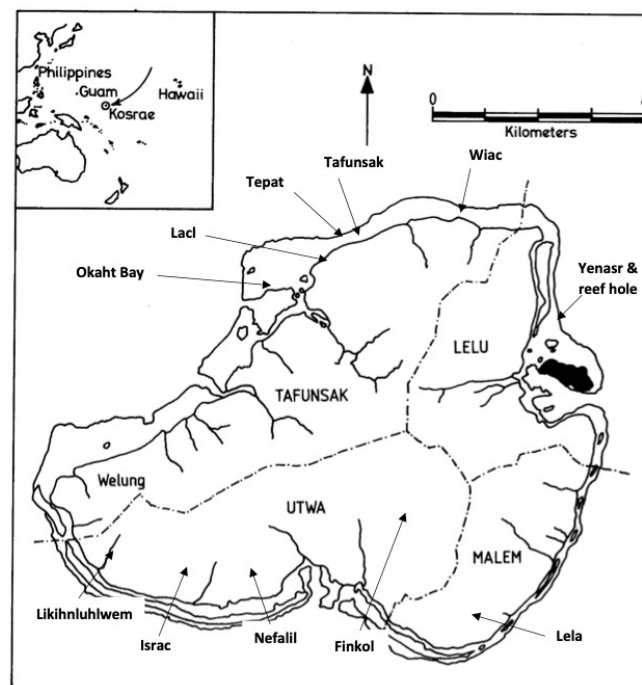


Figure 2. Map of Kosrae, locating places mentioned in the text. Today's municipalities are in capital letters. Leluh Island in the northeast bay is colored black (Adapted from Cordy 1993: Fig. 2).

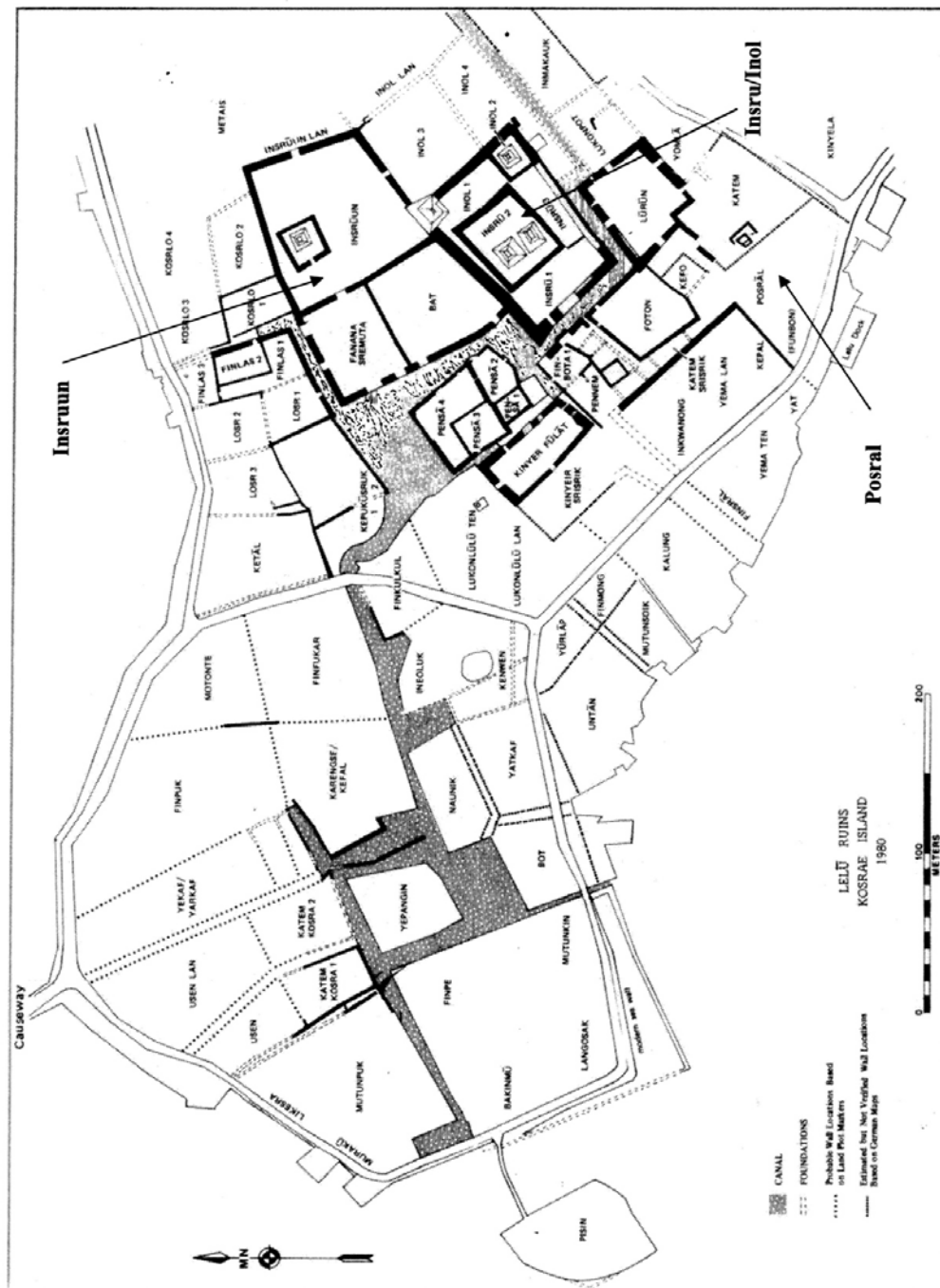


Figure 3. Shun & Cordy 1980-81 map of Leluh, showing the compounds and their names. Posral was the king's compound; Insru/Inol and Insruun were the royal tomb compounds (Adapted from Cordy 1993: Fig. 34).

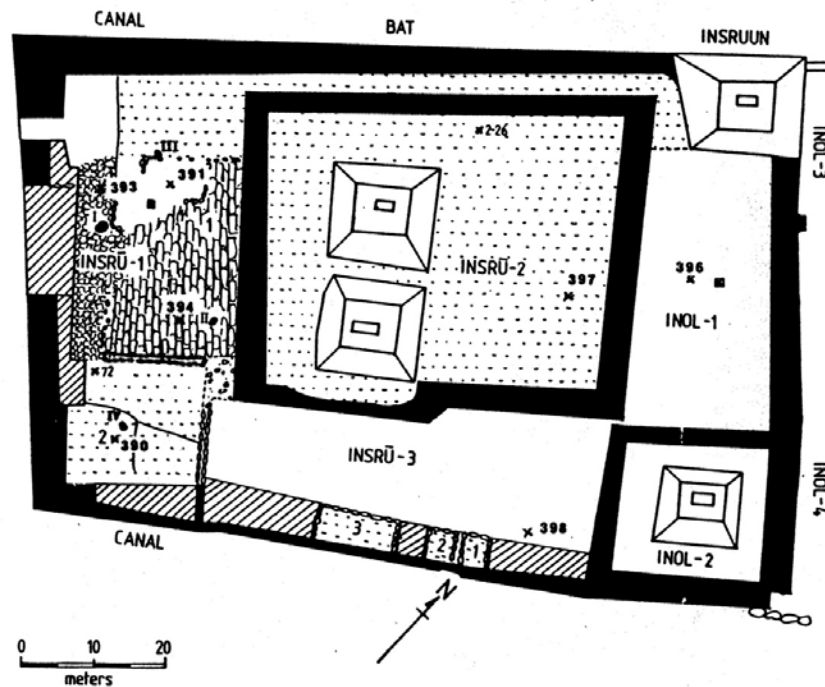


Figure 4. Detailed map of Insrū/Inol. Seka/food pounding stones with Roman numerals, and artifacts marked with “x” and numbers. Our 1980-81 test units are small squares. We excavated in the crypts of all four tombs in 1982 and 1984. Athens’ 1989 test unit was in Inol-1 against the west wall enclosing the Inol-2 tomb (Adapted from Cordy 1993: Fig. 55).

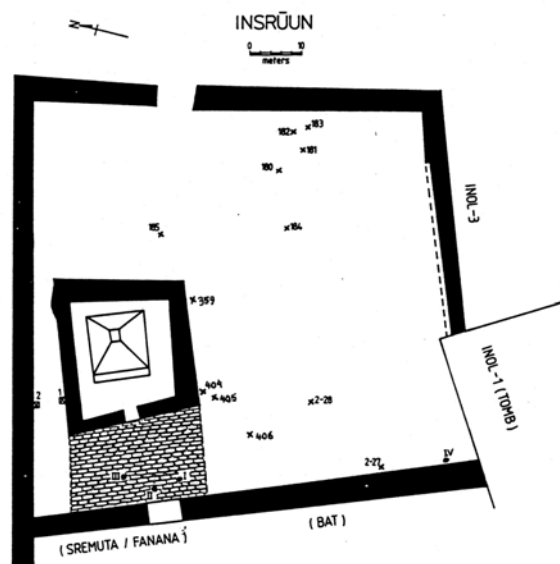


Figure 5. Detailed map of Insrūun, showing locations of test units, seka and food pounding stones, and artifacts (Adapted from Cordy 1993: Fig. 57).

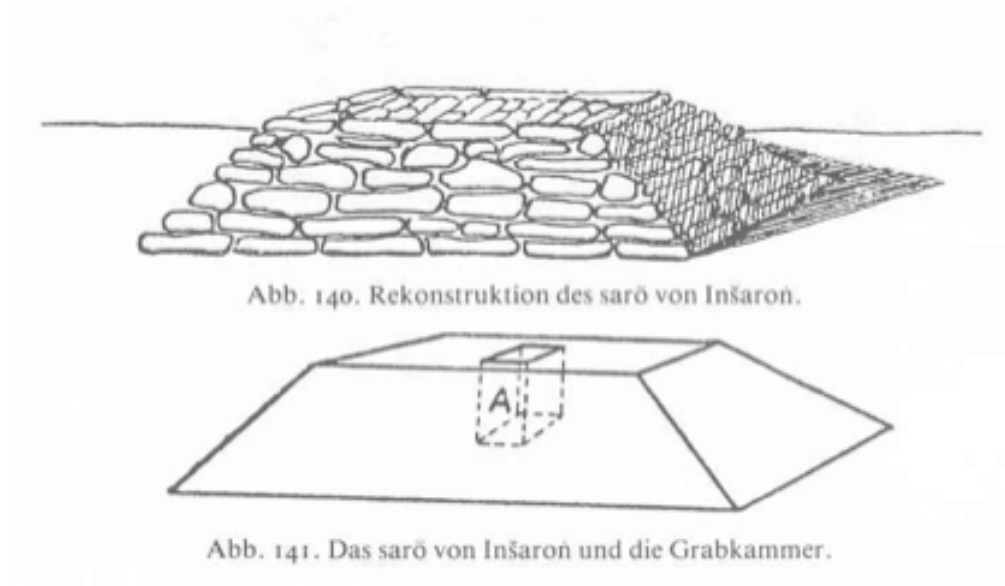


Figure 6. Hambruch's drawings showing the tomb shape and crypt locations (Hambruch 1919:257, Figs. 140 & 141).



Figure 7. Photograph of one of the Insru tombs with Kosrae Historic Preservation Officer T. John standing on top for scale. (Photo by R. Cordy)

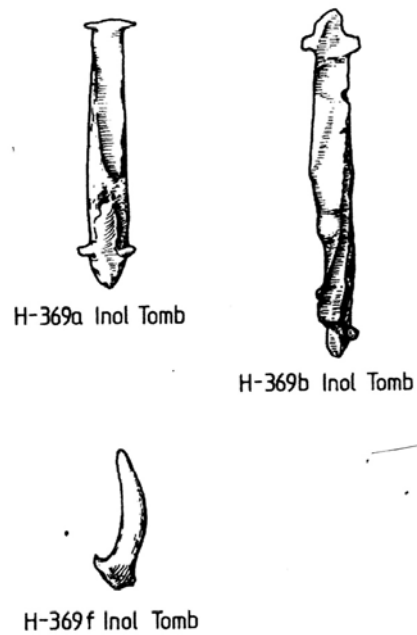


Figure 8. Trolling lure pendants of pearl shell found in the Inol-1 tomb by Hambruch. (Redrawn by Richard Newell, in Cordy 1993a.)

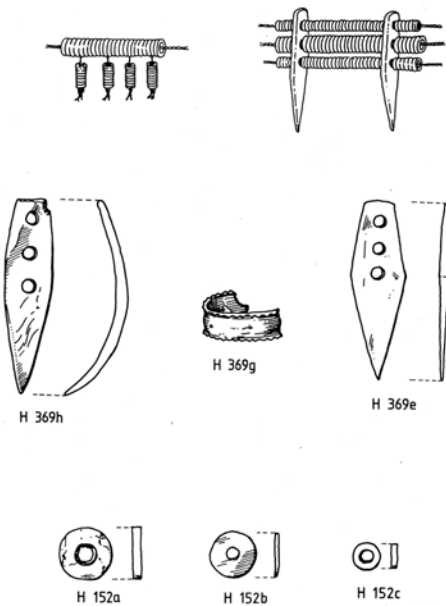


Figure 9. Disk bead necklaces – Hambruch’s reconstructions of necklaces, and examples of shell lancet-shaped necklace spreaders and disk beads from Hambruch’s Inol-1 tomb excavation (Hambruch 1919).

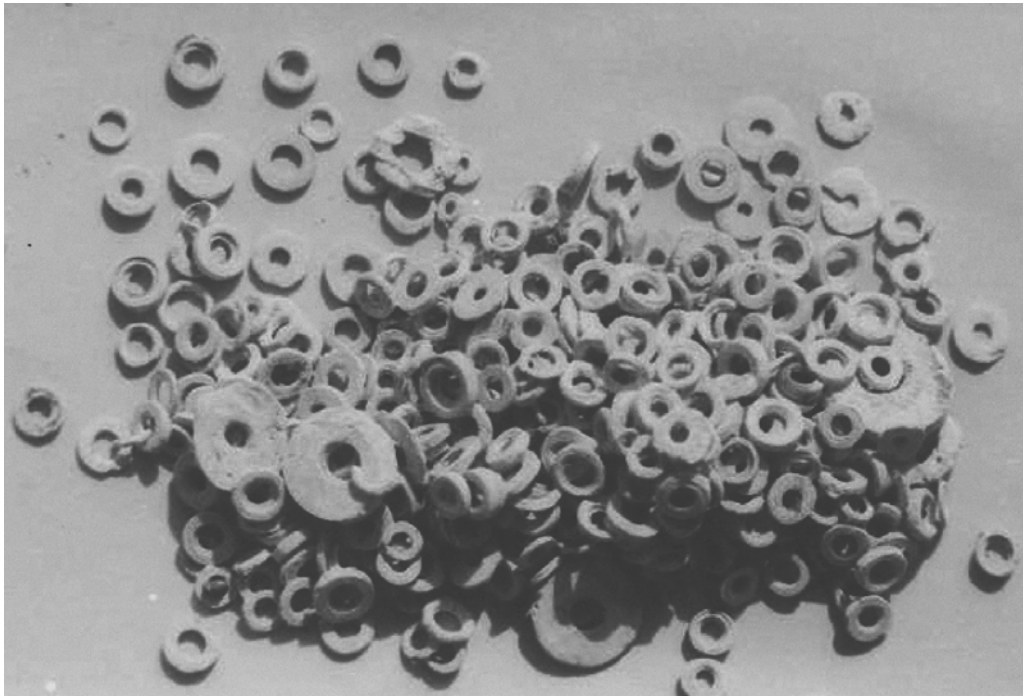


Figure 10. Photograph small disk beads from our 1982 excavations in the crypt of Tomb-1 in Insru. Beads ranged 0.5-2.1 cm in diameter (most 0.8 cm) and 0.1-0.4 cm in thickness. They were of *Conus*, *Spondylus*, and possibly *Tridacna* and varied in color from a dull white to gray and cream. (Photo by R. Cordy)