

Prehistoric and Protohistoric Cultural Occurrences at Tarague, Guam

Received July 1981

HIRO KURASHINA, DARLENE MOORE,
OSAMU KATAOKA, RUSSELL CLAYSHULTE,
AND ERWIN RAY

INTRODUCTION

WHILE THE BODY of archaeological knowledge of Micronesia has been expanded considerably over the last several years (Cordy 1980), little is as yet known of the early chronology, settlement patterns, and dynamics of culture change in the southern Mariana Islands (Fig. 1). Inspired by the modern pioneer works of Reinman (1977), Ray (1981), and Takayama and his associates (1971, 1976) which were built upon the still earlier efforts of Spoehr (1957), a full-scale archaeological excavation was initiated in northern Guam by a team of researchers from the University of Guam in the spring of 1980. The project at Tarague aims to ascertain: first, the prehistoric origins of human habitation on Guam from the perspective of cultural history; second, the cultural and natural processes influencing culture change as seen in archaeological remains; and third, the use of space within the context of island ecology. This article summarizes the preliminary findings made at Tarague during the 1980–1981 field seasons.

GEOGRAPHIC SETTING

The Tarague archaeological site (13°36' N; 144°54' E) is situated along the northern coast of Guam, flanked by Tagua Point to the east and Mergagan Point to the northwest (Fig. 2). The site is some 14 miles due northeast of Agana, the capital of Guam, approxi-

Hiro Kurashina is a research archaeologist with the Micronesian Area Research Center, University of Guam. Darlene Moore and Erwin Ray are research associates with the Micronesian Area Research Center. Osamu Kataoka is a graduate student, Department of Anthropology, University of Oregon. Russell Clayshulte is affiliated with the Water and Energy Research Institute, University of Guam.

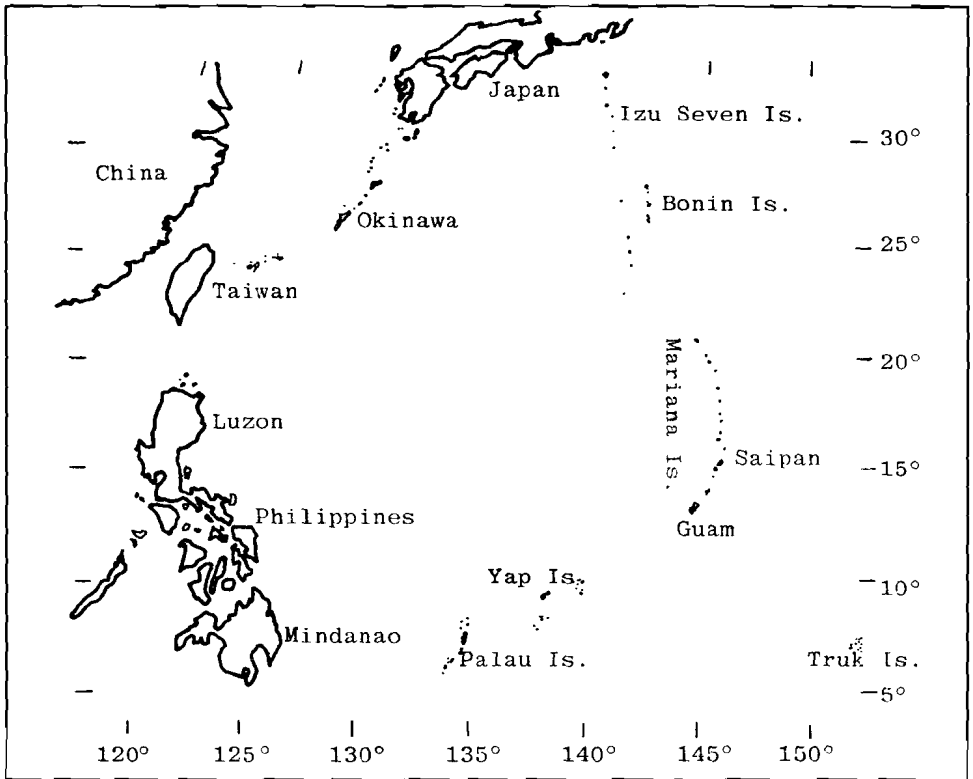


Fig. 1 The Western Pacific region.

mately 33 miles south of Rota, and 1600 miles east of the Philippines. The area under investigation covers a series of scattered archaeological surface remains stretching nearly two miles on the sandy beaches on either side of the Tarague Channel. The beach rises gradually to meet the talus of the limestone cliff, which forms an impressive escarpment 500 feet high. The distance between the shoreline and the cliff varies from less than 300 feet to 2000 feet. In this crescent-shaped area, numerous depressions and fresh-water sinkholes are found, often in association with relics of past human habitations.

Presently the area is under control of the United States Department of the Interior and has no inhabitants. Historically, however, early Spanish documents call attention to a densely populated village at Tarague in the days of Father Sanvitores (Higgins 1968). According to Spanish accounts, the inhabitants of this idyllic setting were not peaceful souls. They were known to be rather rebellious, and the church at Tarague was burned in the year 1678. The village was sacked by the Spaniards, and local inhabitants were forced to flee. Some of those who escaped with their lives took refuge on the neighboring island of Luta (Rota).

Contemporary local flora around the Tarague archaeological site, as examined by F. R. Fosberg of the Smithsonian Institution in the summer of 1980, include 23 species of trees and shrubs, eight species of vines, three species of ferns, six species of grasses and sedges, and 15 species of miscellaneous herbs. While endemic plants are rare (2), exotic (21),

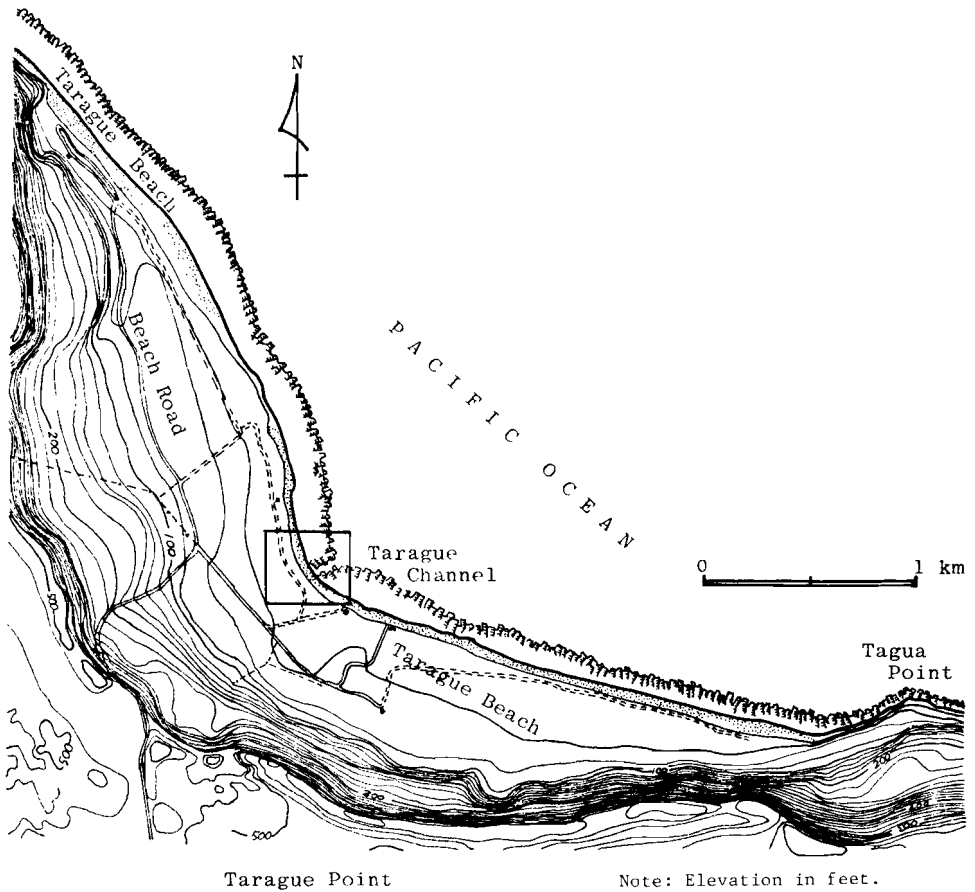


Fig. 2 The Tarague study area.

or indigenous but not endemic (27), plants dominate the floral composition. Five plant species are of aboriginal introduction.

Of the total of 55 plant species, ten are useful plants for various human needs related to subsistence economy, folk medicine, and raw materials for domestic tool kits. These useful plants include coconut palm (*Cocos nucifera*), infertile breadfruit (*Artocarpus altilis*), Indian mulberry (*Morinda citrifolia*), pandanus (*Pandanus tectorius*), fish-kill tree (*Barringtonia asiatica*), papaya (*Carica papaya*), Federico nut (*Cycas circinalis*), chili pepper (*Capsicum frutescens*), yam (*Dioscorea* sp.), and wild taro (*Alocasia macrorrhiza*). It is likely that useful plants such as these have been found in this area for a considerable period of time. In this predominantly beach-strand ecosystem today, the flora support a small faunal population composed of deer, lizard, and feral pig.

RESEARCH FINDINGS: ARCHAEOLOGY

The field research at Tarague began with a land survey along the coastal beach of the northern reaches of Guam. After the completion of the initial survey, intensive excava-

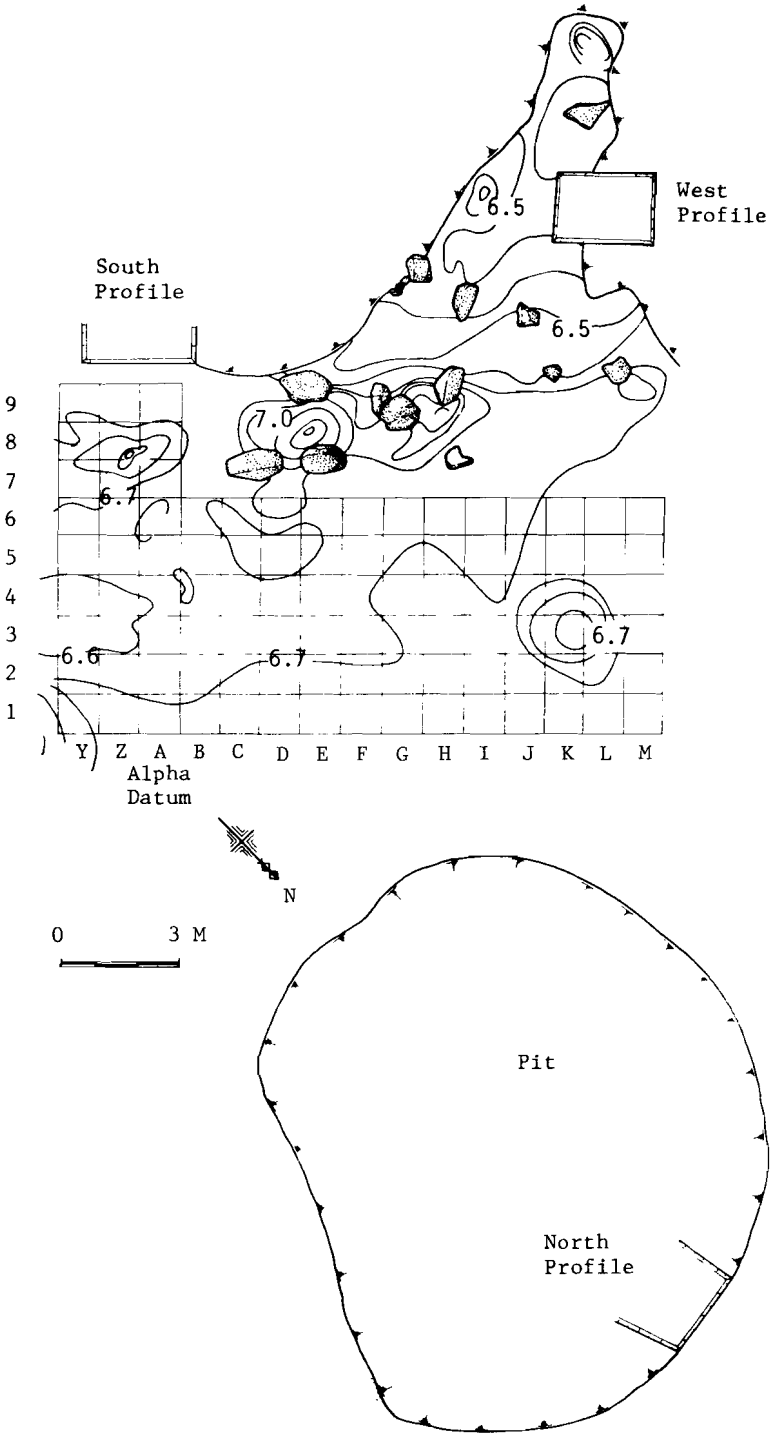


Fig. 3 The Tarague archaeological site. Stippling marks represent latte stones. Alpha Datum is 74 meters inland from high tide line.

tions were conducted at a locality due southwest of the Tarague Channel along the 22-foot contour line. In this area there was a high density of cultural material on the surface, including the remains of megalithic stone structures, locally known as *latte* stones. The latte stones, 16 pieces in all, were scattered about on the inland side of the site and are shaded for easier identification in the accompanying map (Fig. 3). Due to recent disturbances as described by Ray (1981:28), the hemispherical capstones and slab-like uprights were not necessarily found in pairs.

Although the function of these structures has never been definitely established for the Marianas, early Spanish missionary documents and previous archaeological research seem to indicate that they served as habitation sites. Stone mortars, stone and shell tools, and pottery scatters have been associated with the latte structures. Houses were apparently constructed with their floors resting on top of the capstones. Latte stones were purposefully designed: raised floors provided free flow of air for comfort; space below was useful for storing perhaps a canoe and other domestic items; and, particularly, the shape of the capstones may have effectively discouraged rodents from climbing to the living quarters above (Yawata 1961).

Following the land survey, a reef survey was conducted along the strandline and the reef flat. At the tidal zone northwest of the channel, there is evidence of latte stone quarrying activities. Several impressions of latte capstones and uprights are clearly visible in the coral limestone. Especially noteworthy is one almost perfectly preserved latte capstone which rests on the strandline closest to our study area. Also found were weathered pottery fragments, slingstones, shell adzes, and basalt adzes in the general vicinity. Copper nails and ballast stones probably originating from a shipwreck were seen submerged in shallow water near the Tarague Channel.

In order to establish stratigraphic control, careful and systematic excavations were undertaken at the South Profile (Fig. 3; Plate I). To date, nine geologic layers have been exposed at this locality. The lowest stratum (Layer IX) is 4.5 m from the surface, establishing this deposit as one of the deepest stratified archaeological sites ever recorded in the Marianas. In terms of the depth of deposit, Tarague is comparable to the famous Taga site on Tinian which yielded 3+ m of cultural deposit (Pellet and Spoehr 1961).

RESEARCH FINDINGS: GEOLOGY AND MARINE BIOLOGY

The geologic strata at Tarague, according to Barbara Keating of the University of Hawaii, who examined the deposit in October 1980, show human occupation layers alternating with beach sand layers. Lithologically, however, the South Profile is a single facies characterized by backshore and washover fan deposits. These depositional types are associated with severe tropical storms, primarily typhoons, when large volumes of sediment can be eroded from reef flat, foreshore, and backshore areas, and transported and distributed beyond the supratidal storm berm crest or beach ridge (Friedman and Sanders 1978; Reineck and Singh 1980). According to Easton et al. (1978), storm waves in the Tarague area have deposited sediments as much as 10 m above sea level. The occupational site (+7 m) is located on the storm-generated beach ridge and is periodically subjected to washover by storm waves.

The dominant sediment constituents are foraminiferal tests, calcareous algae, coral, and shell fragments. The foraminiferal species *Baculogypsina sphaerulata* (Parker and Jones) and *Marginopora vertebralis* (Blainville), which comprise up to 50 percent of the beach



Plate I Stratigraphy of the South Profile, Tarague. Assistant Director Darlene Moore is 5' 7½". Layer I: Latte phase. Layers II-VIII: Pre-Latte phase.

deposits and are common throughout the stratigraphic horizons, are primarily high-energy reef flat species. Fragments of the red-colored sedentary foraminiferan *Homotrema rubrum* (Lamarck) are conspicuous in beach deposits and the stratigraphic horizons. This species is a major reef flat encruster and shows luxuriant growth in the cryptic interstices of the reef margin algal ridge. There are no lagoon-associated foraminiferal species found in the profile. However, there are foraminiferal species which could originate from a channel environment; *Amphistegina radiata* (Fichtel and Moll), *A. lessoni* (d'Orbigny), *Spiroolina arietina* (Batsch), and *M. vertebralis*. Minor reef flat associated sediment components include calcareous animal tubes, urchin spines, limpets, and small cerithid mollusks. Calcareous spicules, usually associated with soft corals, are found in the finer white unit sediments. Soft corals are primarily found in lagoon environments; however, they can survive in large reef flat holes or reef channels. It is probable that the soft corals in the Tarague area were living in or near Tarague Channel.

CULTURAL SEQUENCE AT TARAGUE

Tarague's cultural sequence is most readily illustrated by an examination of the South Profile. The top layer (geologic Layer I) is approximately 80 cm deep and represents the most recent human occupation. The color of the deposit is uniformly dark brown/black because of rich organic residues. Carbonate grains are mixed throughout this soil horizon owing to transport from the beach area by wave activity. The upper portion of Layer I contains typical latte pottery fragments, *Tridacna* shell adzes, basalt adzes, fish gorges,

and numerous burned fist-sized corals. Close to the surface, an unbroken beer bottle identified as of World War II vintage was unearthed. Another important find in this layer was a piece of brown glazed ware which may be of Spanish origin. Upon initial inspection, the cultural material from the lower portion of Layer I appears to represent a transitional phase between those which have been described in the literature as two classic phases of culture history for the Marianas, Pre-Latte (c. 1500 B.C.–ninth century A.D.) and Latte (ninth century A.D.–seventeenth century A.D.). Perhaps the work at Tarague will define clearly this transitional phase. Geologic Layer II, 40 cm in thickness, has a light brown appearance. The deposit is composed predominantly of carbonate sand.

Geologic Layer III is termed a Paleosol Horizon. Here a distinctive reddening of the soil suggests the presence of iron and aluminum in clayish, sandy soil. This layer is rich in cultural material (Pre-Latte) which is extremely well preserved. An almost complete shallow vessel with a diameter of 36 cm was recovered from this soil horizon (Plate II). As in Layer I, this layer represents intensive human occupation and contains numerous burnt or unburnt pieces of coral limestone. As the cultural material appears to be in primary context, there is much potential for gaining insight to the use of space during the Pre-Latte phase through extensive areal excavation in this stratum. Geologic Layer IV is composed of whitish beach sand and is about 20 cm in thickness. The matrix is mixed with coral and carbonate sand. While Layers III, V, and VII represent periods of relatively intense human occupation of the Pre-Latte phase, Layers II, IV, VI, and VIII are composed of white beach sand.

A preliminary assessment of the pottery recovered along the South Profile reveals that pottery types characteristic of other archaeological sites in the Marianas are also present at this site. The earliest potsherds coming from the deepest strata of the site, Layers VII–VIII, are from thin-walled, rather small vessels. The presence of these magnificently well-made wares is of considerable interest as they represent the distinctive Marianas Red Ware, defined by Spoehr (1957), which has been reported for only a few of the earliest archaeological sites in the Marianas. A decorated variant of the Marianas Red occurs in Layer VI of the South Profile. It is similar to the Lime-Imprinted Trade Wares reported by Spoehr for Saipan and likewise noted on Guam at Ypao (Leidemann 1980); some of these impressed sherds from Tarague are filled with lime. Such decorative techniques are reported for other areas of Oceania including the Philippines (Bellwood 1979; Solheim 1968). In addition, some interesting rim designs utilizing circles and other geometric forms were found on sherds from Layer III. Pottery with massive walls as much as 4 cm thick occurs in Layers II, III, IV, V, and VI. It is anticipated that some of these materials may be as old as 2000 years or older in view of the ^{14}C date obtained from Layer III by Ray (1981:284). Additional samples from Layers I, III, V, and VII are currently being processed by Dr. R. E. Taylor at the University of California at Riverside.

Apparently more than one type of vessel form was made and utilized over the long period of habitation represented at Tarague. Clearly, the variation in pottery size and shape had both temporal and functional significance. The relatively thick-walled pottery was no longer being manufactured by the Latte phase.

The potsherds associated with the Latte phase, occurring in the topmost geologic layer, seem to have originated from vessels containing walls or bases generally 1 cm thick or less. The majority of the Latte phase pottery was undecorated. However, combing and trailing techniques were commonly employed on the surface of vessels attributed to the late Latte phase.

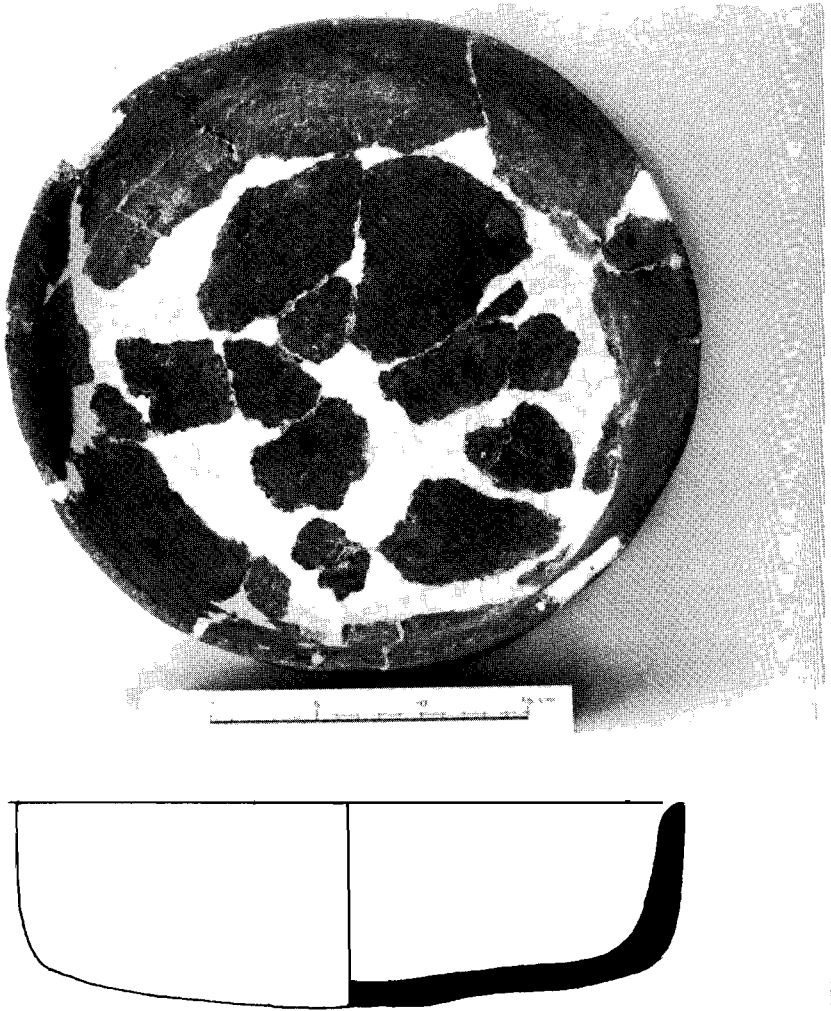


Plate II Pre-Latte pottery vessel from Layer III, South Profile, Tarague.

BURIAL PATTERNS AT TARAGUE

During the course of excavating the South Profile, another vertical control unit designated as the North Profile was placed closer to the Tarague Channel. Partial and complete skeletal remains were encountered at both locations. As the remains were exposed, data regarding body orientation, burial context, grave accoutrements, as well as the spatial distribution of the burials were recorded. The remains of two complete individuals were recovered from Layer I/II at the North Profile (Fig. 4). These two burials were found adjacent to each other. The first was a female, approximately 30 years of age, lying in a flexed position in a pit. The skeleton was partially turned toward the right side facing the sea. Shells, a sea urchin spine, pottery, and coral fragments were found in the matrix of

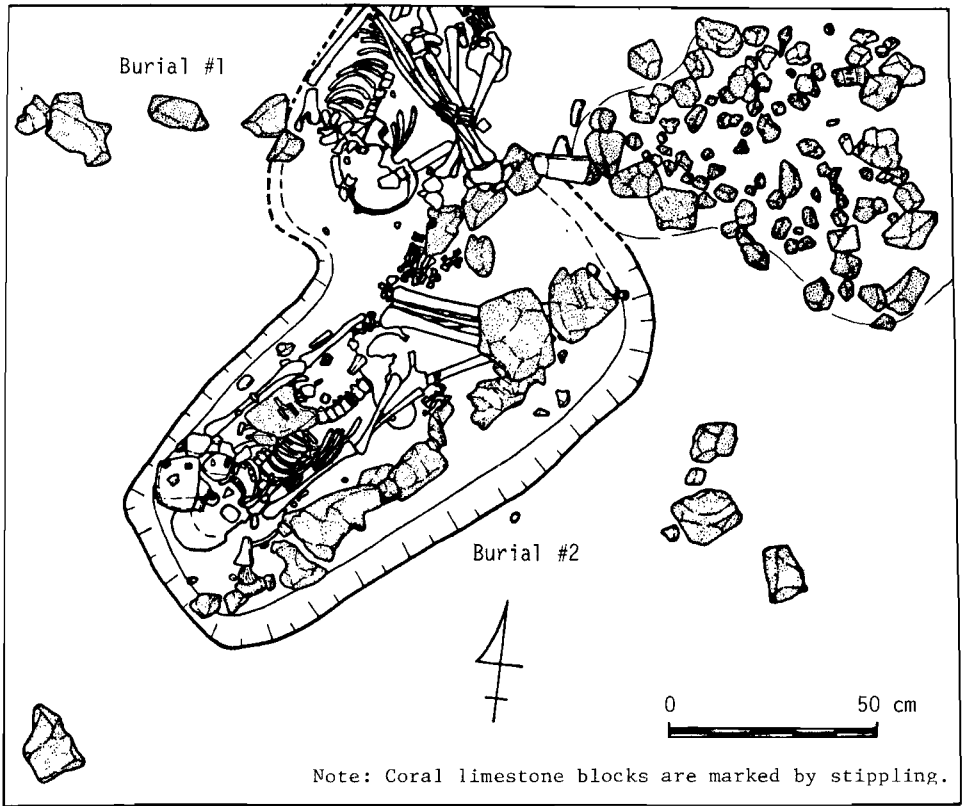


Fig. 4 Plan of burials found at the North Profile, Tarague.

the burial fill. Perhaps further comparative studies will indicate whether the presence of these materials constituted grave goods, as such items also appear in the soil deposits at Tarague.

Just below the first burial, a second female was interred. The skeleton of this individual was partially flexed, that is, the skeleton was lying on its back, skull facing up, left arm extended along the left side of the body and the right arm lying over the pelvic area. The legs were flexed to the right from the hips so that the knees pointed toward the sea and the feet inland. Two rows of coral rocks had been placed about 10 cm apart below the skull of this individual. The left arm was outside the rocks which had been placed over the left rib cage and pelvic area. Along the right side, the rocks were aligned with the right arm bones and over the knees. Large fragments of a pottery vessel had been placed on the left side of the skull. The vessel appears to be of the type of pottery associated with the Latte phase. For both of the burials encountered, preservation of skeletal material was quite poor, making retrieval of bones most difficult. This was also the case for a solitary skull found in Layer II in the South Profile. The skull, which was facing east, had numerous pottery fragments associated with it.

The remains described above appear to follow the general patterns noted by previous researchers for Latte phase burials (Thompson 1932; Reinman 1977), including extended or flexed primary interments, partial or whole secondary interments, often associated with

coral rocks and potsherds. As the excavation proceeds into the levels dating to the Pre-Latte phase, perhaps information regarding earlier burial customs as well as the physical characteristics of the first Tarague settlers may be uncovered and examined. Very little information is presently available regarding Pre-Latte mortuary practices.

DISCUSSION

Survey and excavations conducted during 1980–1981 at Tarague have yielded partial but strong evidence for elucidating the origins of human settlement on Guam. Thus far, at least in the Marianas, aims for archaeological work have been more practical than theoretical. On the whole, approaches in the field have been limited to land survey and small-scale subsurface testing, while laboratory operations have been concentrated on the description and typological classification of pottery sherds. With the increasing awareness for the need of systematic archaeological research in the Marianas, the work at Tarague was specifically designed to seek culture historic reconstruction and culture processual interpretation by means of deliberate hypothesis testing. Is Guam marginal or central to the question of the human conquest of the Pacific? Was culture change the result of peaceful migration and diffusion of ideas or of violent invasion by conquerors? Did Guam play a vital role in maritime trade throughout Micronesia? How was Guam first colonized and subsequently developed by later inhabitants? In spite of some previous research efforts in Micronesia, the movement of people into this portion of the Pacific is not well understood. These broad questions and a more specific one—when and from where did the first migrations of people settling Guam originate?—continue to be the primary inspiration for archaeological data recovery projects on Guam.

Tarague has been definitely established as a Pre-Latte occupation locus (Ray 1981). Known sites representing this early period are few and not well documented. It is anticipated that more extensive investigation of this site will contribute significantly not only to our understanding of the Pre-Latte phase but also to its relationship to the Latte phase. Ray (1981) noted a discontinuity between these two phases at Tarague. It seems clear that additional data are required to explain the cultural transition indicated by archaeological materials. One of the objectives of this research project will be to correlate the results of radiocarbon testing with the archaeological record to generate a reliable chronology for Tarague.

The excavations at Tarague have produced at least 8 cultural layers which exceed 3.0 m in depth from the present-day ground level. This is, by far, one of the deepest cultural deposits ever found in the Marianas. Do these geologic layers which contain cultural remains conform to the existing culture historic sequence as defined by Spoehr, Reinman, and Ray? If it turns out that the prehistory of Guam, as seen in the archaeological records from Tarague, appears more complex than just the Latte/Pre-Latte divisions, then we should undertake a reexamination and revision of Marianas culture history.

ADDENDUM

After the manuscript was submitted, a series of radiocarbon dates was obtained for the Tarague site. The results are as follows:

Layer I	1150 ± 80 B.P. (UCR-1472)
Layer V	2100 ± 270 B.P. (UCR-1474A)
Layer VII	3060 ± 350 B.P. (UCR-1475B)
Layer VIII	3435 ± 70 B.P. (Beta-4897)

ACKNOWLEDGMENTS

We would like to extend our sincere thanks to some 20 University of Guam students who participated in the Tarague Archaeology Program. Rosa Carter, Jesse Jennings, Yoshiko Sinoto, Jun Takayama, Leonard Mason, Rebecca Stephenson, Robert Kiste, Ray Fosberg, Barbara Keating, D. Hilyard, Roy Tsuda, Stell Newman, Dirk Ballendorf, G. Boughton, and Jerry Ayers provided expert advice and encouragement at various stages of the project. Our appreciation to the Guam State Historic Preservation Office and the Commander of the Andersen Air Force Base is also acknowledged here. The project received financial support from the Western Pacific Studies Program, the Research Council, the College of Arts and Sciences, and the Micronesian Area Research Center at the University of Guam.

REFERENCES

- BELLWOOD, PETER S.
1979 *Man's Conquest of the Pacific*. New York: Oxford University Press.
- CORDY, ROSS
1980 Archaeology in Micronesia. *JPS* 89:359-365.
- EASTON, W. H., T. L. KU, AND R. H. RANDALL
1978 Recent reefs and shore lines of Guam. *Micronesica* 14:1-11.
- EMERY, K. O.
1962 *Marine Geology of Guam*. U.S. Geological Survey Prof. Paper, 403-B.
- FOSBERG, F. RAYMOND
1960 The vegetation of Micronesia. *American Museum of Natural History Bulletin* 119:1-75.
- FRIEDMAN, G. M., and J. E. SANDERS
1978 *Principles of Sedimentology*. New York: John Wiley and Sons.
- HIGGINS, MARGARET, trans.
1968 Life and martyrdom of the Venerable Father Diego Luis de Sanvitores by Garcia (1683). Edited by Marjorie Driver. Mangilao: Micronesian Area Research Center, University of Guam. Manuscript.
- JENNINGS, JESSE D.
1980 Role of the Micronesian Area Research Center and Department of Anthropology, University of Guam: Special Report. Mangilao: Micronesian Area Research Center, University of Guam. Photocopy of typescript.
- LEIDEMANN, HELEN H.
1980 Intra-site variation at Ypao Beach, Guam: a preliminary assessment. M.A. thesis, University of Guam, Mangilao.

PELLET, M., AND SPOEHR

1961 Marianas archaeology: Report on an excavation on Tinian. *JPS* 70:321-325.

RAY, ERWIN R.

1981 The material culture of prehistoric Tarague Beach, Guam. M.A. thesis, Arizona State University, Tempe.

REINECK, H. E., AND I. B. SINGH

1980 *Depositional Sedimentary Environments*. New York: Springer-Verlag.

REINMAN, FRED

1977 *An Archaeological Survey and Preliminary Test Excavations of the Island of Guam, Mariana Islands, 1964-66*. Micronesian Area Research Center, Miscellaneous Publication no. 1, University of Guam.

SOLHEIM, W. G. II

1968 The Batungan Cave sites, Masbate, Philippines. In *Anthropology at the Eighth Pacific Science Congress*, edited by Wilhelm G. Solheim II, pp. 21-62. APAS no. 2.

SPOEHR, ALEXANDER

1957 Marianas prehistory. *Fieldiana: Anthropology*, Vol. 48.

TAKAYAMA, JUN, AND MICHIKO INTOH

1976 *Archaeological excavation of Latte site (M-13), Rota, in the Marianas*. Reports of Pacific Archaeological Survey, no. 4. Hiratsuka City: Tokai University.

TAKAYAMA, JUN, AND TOMOKO EGAMI

1971 *Archaeology on Rota in the Marianas Islands*. Reports of Pacific Archaeological Survey, no. 1. Hiratsuka City: Tokai University.

THOMPSON, LAURA

1932 *Archaeology of the Marianas Islands*. B. P. Bishop Museum, Bulletin 100. Honolulu.

YAWATA, ICHIRO

1961 Rice Cultivation of the Ancient Mariana Islanders. In *Plants and the Migrations of Pacific Peoples*, edited by Jacques Barrau. Honolulu: Bishop Museum Press.