

## A SUMMARY OF ARCHAEOLOGICAL WORK IN MICRONESIA SINCE 1977

*Ross Cordy  
Historic Preservation Office  
Trust Territory of the Pacific  
Islands.  
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### INTRODUCTION

As I noted in a recent short article in the Journal of the Polynesian Society (Cordy 1980), Micronesian archaeological research has boomed since mid-1977. Close to 200 projects have occurred over the last 4 years compared to c. 15 over the previous 30 years. The Trust Territory of the Pacific Islands Historic Preservation Office's archaeological research program has been the major reason for this boom. Nearly all the recent archaeological research has been funded by the Historic Preservation Office or undertaken by the office's staff itself. The office has received over \$1,000,000 in United States federal historic preservation grants from the U.S. Department of the Interior since 1976. Additionally, the Trust Territory government has contributed ca \$100,000 per year. The Historic Preservation Program's major duties are to put these funds into archaeological site inventory work, the protection and development of valuable sites in the region, and impact assessments prior to construction. Each of these tasks have often involved archaeological survey and less frequently excavations.

I have had the good fortune to direct and guide the Historic Preservation Office's archaeological research over the last 2½ years (to March 1981). Thomas King was my predecessor, having initiated the research program in mid-1977. This paper briefly summarizes the archaeological work done since 1977.

### BACKGROUND ON THE HISTORIC PRESERVATION OFFICE'S ARCHAEOLOGICAL PROGRAM

#### General Categories of Researchers

Archaeological work in the Trust Territory has been conducted by three different groups over the last 4 years. One group comprises outside professionals who are contracted to do work, and another comprises the central office's staff. Thomas King (1977-March 1979) and I (November 1978-March 1981) have previously been the professional archaeologists on this staff, and Graeme Ward has taken over the Staff Archaeologist position since May 1981. Last, there are the staff of our local offices in each former district; most of these have been trained in basic archaeological techniques. Additionally, a 10-man survey team in Kosrae, a 5-man survey team in Truk, and a 2-man team in Palau have been trained since 1979. The local staff do basic survey work. Only the professionals have

done unsupervised excavation work.

#### Major Categories of Research

I divide the archaeological work that has occurred in Micronesia over the last few years into 2 categories - pure archaeological research and construction-related research. The Historic Preservation Office has used its federal awards to grant survey projects to various researchers for pure archaeological research. In each case, a research focus was required, not a simple inventory of sites that often occurs in historic preservation work. Also, the local survey teams in Kosrae, Truk and Palau have done survey work in a village settlement-pattern research context under my supervision.

Construction-related research is involved in impact assessment. The local offices, the central staff, and outside researchers have all been involved in this kind of work, and attempts have been made to establish a research focus for it, but it is only just taking hold. Thus, many of these projects are simply surveys of an area and inventories of sites with impact recommendations. Exceptions occur in the Kosrae staff's work, the central staff's work, and in some outside professional work.

#### Areal coverage and general research problems

The Historic Preservation Program has played a vital role in guiding the problem orientation and area coverage of research in Micronesia. Prior to 1977 area coverage was poor. Many areas were blanks. Accordingly, one aim was to see that all major areas in the region were fairly evenly covered. In 1977 work was done in Truk Lagoon, Ponape, Palau, and the Northern Marianas. In successive years, coverage expanded to include outer island Yap (Ulithi) (1978), Kosrae (1979), the Marshall Island (1979), outer island Ponape (Kapingamarangi) (1979), outer island Truk (the Morlocks) (1979), and Yap Proper (1980). Research has generally been maintained in each area.

Attempts have also been made to establish long-term research programs in every area. Ayres' work in Ponape (Ayres and Haun 1981) and the work of the Pacific Studies Institute in Yap began in 1977 and 1978. I initiated such research in Kosrae in 1979, and Gumerman has begun a second year in Palau. This year it is hoped to establish long-term research in Truk.

Last, attempts were made to widen the nature of research in Micronesia (see Cordy 1980). Prior to 1977, much of the research in the area addressed the problems of origins and chronology through cultural periods based on artifact types. The aim has been to encourage workers with other research interests to enter the area, as well as to continue support for the previous form of work. This aim has been very successful. Site patterning studies have

increased. A number of new research problems have taken hold, such as reconstruction of exchange networks, social organisation, and subsistence systems and the study of the development of complex societies. Origin studies have also continued, and in greater numbers.

#### Dissemination of archaeological information

One of the biggest problems of a government office is to get reports out to the widest possible audience. Usually, only a handful of reports are prepared at the conclusion of a project, and they disappear rapidly. Initially, the Historic Preservation Office tried to alleviate this problem by distributing copies of reports to major libraries accessible to the Pacific public. The Micronesian Area Resource Center at the University of Guam and the Bishop Museum in Honolulu were early depositories. In 1979, the Community College of Micronesia's Library on Ponape and the Hamilton Library at the University of Hawaii were added.

Last year, publication of reports was initiated as a means of getting wider circulation of the research work. The initial monograph (Ayres and Haun 1981) has just come out, and three more are in press.

#### SUMMARY OF RESEARCH WORK BY FORMER DISTRICTS

##### Marshall Islands

Prior to 1979, only one archaeological project had occurred in the Marshall Islands: the 1977 Bishop Museum/Kelton Expedition (headed by Paul Rosendahl). This project was a reconnaissance survey. A large number of atolls were briefly visited, sites were identified, surface collections were made, and a very few test excavations occurred.

In 1979 a grant was awarded to Rosendahl by the Historic Preservation Office to complete the analysis and the report on the 1977 work. In 1979 Thomas Riley (Bishop Museum) conducted a survey of prehistoric sites on Majuro Atoll (with test excavations). Also, in 1979, I prepared a predictive site pattern model for Majuro based on Riley's and Rosendahl's preliminary reports. This study was done largely to provide information for historic preservation planning purposes. In 1980 Michael Rynkiewicz (MacAlister College) studied Majuro's Colonial Era land use patterns and inventoried remnants of sites, and Patrick Kirch (Bishop Museum) did survey work on Arno Atoll. In sum, 3 projects, 1 analytical project, and a site predictive study have occurred in the Marshall Islands under the Historic Preservation Office's program.

Site inventory was a primary focus of Riley's, Rynkiewicz's and Kirch's work. General site patterns were the problem of my predictive study. Riley's and Kirch's analyses also consider the establishment of chronological time depth and adaptation to the

natural environment (in relation to marine subsistence and site location). Rynkiewicz's study is on general land use in Colonial times.

Results indicate a mixed shell artifact assemblage and a settlement pattern with a variety of site types (from fishtraps to subsurface village remains). Over 100 sites were found on both Majuro and Arno. On Majuro most sites clustered on the larger islets. A date of c. A.D. 0 has been processed from Majuro.

#### Kosrae

Prior to 1977 no archaeological work had been done on Kosrae for almost 40 years. Thus, a major objective of the Historic Preservation Program was to initiate intensive work on this high island. My work and the Kosrae Historical Preservation Office's work are discussed in my short companion paper in this bulletin. This research consisted of a number of surveys of traditional land units on the main island and intensive investigations in the Lelu Ruins. A few other projects are noted here.

In 1977 Paul Rosendahl spent a few days on Kosrae at the end of the Bishop Museum/Kelton project. He rapidly checked a few areas on the main island and mapped a few sites. In 1977, Jerry Watson (affiliated with the Bishop Museum) spent a month and located a few sites. In 1980 Yoshihiko Sinoto with Japanese research funds did a reconnaissance survey of some coastal areas and conducted excavations at the Wiya Bird Cave. Also, Colonial era sites in Lelu Municipality have just been studied for the Historic Preservation Office by Paul Ehrlich.

A number of construction related projects have been done since 1977. The Kosrae Historic Preservation Office has done most of this work. The Pacific Studies Institute also did two projects. In 1978 John Craib conducted a brief reconnaissance survey for the Historic Preservation Office and initially described two sites. In 1979 Sam Price surveyed the waterline from Malem to Tafeyat for the Trust Territory Community Development program.

Results from my work are summarized in my accompanying paper. Sinoto found 2-3 meter deep deposits in the Wiya Bird Cave and obtained a date of AD 1370  $\pm$  85 from a sample at 1 meter below ground surface.

My work has been on village settlement patterns and the development of hierarchical societies. More specifically, models for village settlement patterns have been established and interpretations have gone further, towards reconstructing village social organization and population sizes. Analysis of the development of complex societies is aimed at reconstructing the number of social strata at different times, beginning with work on Lelu Island and then moving to the main island. Sinoto's brief work had a focus on origins,

although findings have yet yielded no information on this topic. The other projects have had a basic inventory focus.

### Ponape

Ponape State and Ponape proper have seen the most archaeological work over the last 4 years. On Ponape itself, William Ayres and his graduate students from the University of Oregon have worked for 4 years with Historic Preservation Office funding (Ayres and Haun 1981). Their study has been focussed in 3 areas - Awak Valley (Uh), Wene (Kitti) and Ant Atoll (Kitti). Analysis to date has largely focussed on settlement variations and chronological changes. Dates from Awak and Wene go back to c. A.D. 400, and dates from Awak's inland swamps of c. 200-100 B.C. might suggest slash and burn agriculture.

A number of other research projects have also occurred on Ponape. Four have been at Nan Madol. In 1977 Arthur Saxe (Ohio University) was granted funds to delimit the borders of Nan Madol and make development recommendations. He found the site was larger than expected, encompassing nearby islands. In 1979-1980 Stephen Athens (then of Pacific Studies Institute and now of the Bishop Museum) mapped and surface-collected artifacts on 4 islets in Nan Madol (Athens 1980a, 1980b). In 1980, I conducted a brief architectural style analysis for comparison with Lelu on Kosrae. Presently, an oral history study of the site is being done by Masao Hadley (Ponape Historic Preservation Office) and Paul Ehrlich.

Two other research projects are ongoing. Joyce Bath (University of Hawaii) is doing her Ph.D research on funds granted by the Historic Preservation Program. This work is a study of Sahptahkai (Kitti's former capitol) and its surrounding region. Charles Streck (U. of Hawaii) is doing his Ph.D. research with funds from Hawaii Marine Research and the Historic Preservation Program in other areas in Kitti. His focus is on variability in marine resource exploitation.

Over the last 3 years a large number of archaeological projects have been done prior to construction work. Much of this work has been done by the Ponape Historic Preservation Committee. On more complex projects, outside help has been obtained. For example, on the circumferential road, Arthur Saxe was funded to help survey portions of the road corridor in Madolenihmw in 1977, and in 1979 Charles Streck (Hawaii Marine Research) was funded to survey the Kitti and remaining Madolenihmw sections. In 1979, Stephen Athens (then of Pacific Studies Institute) surveyed the inland part of Palikir (Sokehs) where the new Federated States of Micronesia's capitol and community college campus are to be built. All of these surveys have located prehistoric and Colonial Era sites. Excavations have taken place this year in the road corridor in Kitti (by Charles Streck).

The high growth area of Kolonia was a focus of the Historic Preservation Program. A historical and archaeological survey of

Colonial Era sites was funded in 1979, undertaken by David Hanlon (formerly with the Community College of Micronesia, now a Ph.D. student in History at the University of Hawaii). A fascinating picture of the evolution of this small town resulted.

In the outer atolls of Ponape, work has occurred on Mokil, Pingelap and Kapingamarangi. In 1977, Rosendahl stopped briefly on Mokil and Pingelap and found archaeological deposits on both. In 1979-80, B.F. Leach (University of Otago) and Graeme Ward (Australian Institute of Aboriginal Studies) conducted archaeological survey and test excavations on Kapingamarangi. A number of sites were found. Excavations were focussed on Touhou Islet where deposits were ca. 4 meters deep. Analyses of findings are ongoing. Michael Lieber (Social Anthropologist, University of Illinois at Chicago Circle) assisted this archaeological work on Kapingamarangi. In 1980, Lieber was given a grant to study traditional fishing technology and its archaeological associations.

Last, in 1979, I prepared predictive site pattern models for Ponape proper and the atolls (based on existing work). This was part of the Historic Preservations Officer's efforts for impact planning and management.

Ayres and his students have as a general research problem the development of hierarchical societies on Ponape. His working causal hypothesis centers upon resource specialization. However, immediate field research problems have included chronology, architectural and artifact assemblages and settlement patterns. Athens has focussed on activity area analysis at Nan Madol. Hanlon, Leach and Ward, Bath, and Streck have all studied site patterning. Bath specifically is interested in the development of hierarchical societies, and Streck, Leach and Ward are interested in variation in marine resource exploitation and, in Streck's case, the relation of these variations to hierarchical ranking. Leach and Ward have a further interest in origins. My predictive study has a site patterning focus.

### Truk

Pure research in Truk has been relatively limited. Jun Takayama (Tezukayama University) did brief work in the Mortlocks in 1979. He conducted test excavations on three islets in Satawan Atoll, one islet in Etal Atoll and one islet in Lukunor Atoll. Carbon samples from shell have yielded dates of c. A.D. 900 from Moch Islet (Satawan). Takayama suggests a possible Trukese origin for these Lower Mortlock sites.

In 1980, a geoarchaeological study by Colin Brooks (Private Mining Engineer, Adelaide) was funded. Stone artifacts from a number of sites and natural rocks were studied for their sources. The early Fefan site's stone artifacts were found to be metamorphic, suggestive of a Yapese origin. Also, changes in sea level and shorelines were reviewed. Other research work was done in 1980 on Moen. Tunnuk Village and Winipis in Sapuk Village were surveyed by the Truk

Historic Preservation Officer's Archaeological Survey Team under my indirect supervision. These were survey projects focussing on village settlement patterns. No excavations occurred. The Survey Team also finished a survey of Pis (an islet on the edge of the Lagoon) in early 1981.

Predevelopment archaeological work also has taken place in Truk on Moen and Dublon. In 1978, John Craib (then of Pacific Studies Institute) surveyed narrow road corridors for the Historic Preservation Program on Moen and Dublon and found several sites. Rob Edwards (Cabrillo College, Calif.) did the same on Tol. In 1978 and 1979, Thomas King (then of the Historic Preservation Office, now with the Advisory Council on Historic Preservation) surveyed and conducted excavations in Iras and Mechitiw villages in relation to the new Truk Airport and the Iras Sewer construction. Dates from the coastal Iras Village site extend back to c. 380-350 B.C. The site is unlike Fefan in artifact assemblage, and has no pottery. Inland house sites dated late - c. A.D. 1200-1400. King and the Truk Archaeological Survey Team did several other small projects in 1979, and the Truk Team has continued this work. One of these projects involved analysis by the central staff of the Wichen petroglyph area on Moen.

Presently, archaeological salvage work is ongoing along road, water, and sewer corridors in Iras, Mechitiw, and Sapuk shore sites on Moen. Patricia Parker (University of Pennsylvania) is doing this work.

Origins have been addressed by King's research at Iras, Brook's geoarchaeology project, and Takayama's work in the Mortlocks. Village settlement patterns have been a focus of King's, Cordy's and the Truk Survey Team's work. Further, King looked at activity areas within Iras Village.

#### Yap

Fieldwork has taken place both on Yap Proper and on the outer atolls since 1978. Pure research work began in Yap in 1978 when John Craib (then of Pacific Studies Institute) conducted survey work on Ulithi (Craib 1980). A date of c. A.D. 260 comes from Mogmog Islet. Craib's focus was settlement patterns. In 1978, funds were granted to Keiko and William Alkire for laboratory and write-up analysis of their 1977 test excavations on Faraulep, Woleai and Lamotrek atolls. Yapese pottery was found in contexts dating back to c. A.D. 1200.

In January 1980, I ran a short training program in survey methods for the new Yap Historic Preservation Office's Co-ordinator, Andrew Kugfas. Settlement patterns in 2 villages (Balabat and Gitam) were briefly studied. A second project (planned for Spring of 1980, but delayed until October) surveyed the housing areas in 9 villages to study settlement patterns and variations between coastal-inland, leeward-windward, and high-low ranking villages. This project is to

serve as an initial starting point for settlement pattern studies in Yap. In 1980, Rosalind Hunter-Anderson (Pacific Studies Institute) was granted funds to conduct a detailed survey of one village. This survey (of Toru Village) has just been finished. Hunter-Anderson also has done extensive background research on Yap under another grant project. Finally, also in 1980, Jun Takayama and his students did excavation work on Ngulu Atoll and in southern Yap.

Construction related research also has occurred on Yap. In relation to the new Yap Airport, surveys were done by Patrick Kirch (Bishop Museum); John Craib, Thomas Dye and Samuel Price (Pacific Studies Institute); and Thomas King in 1978, and by Douglas Hanson, Claire Hanson, and Robert Pickering (Pacific Studies Institute) and by myself and Andrew Kugfas in 1980. Over 2,000 burials and extensive ditch-bed agricultural systems were found in this inland savannah area. Excavation focusing on mortuary patterns was done by the Hansons and Pickering in conjunction with ethnographic work by Sherwood Lingenfelter (S.U.N.Y. Brockport). Other surveys have occurred. Some examples are Craib and Price's 1978 powerline survey in Map, King's 1978 water system survey in Rumung, and several 1980 road and water system surveys in Tamil and Rull by Andrew Kugfas.

Takayama's work has had a focus on origins, and results are yet unclear. Craib and Price's 1978 research suggested a village settlement pattern model, which I modified in my 1980 work. This considered village population sizes and the development of complex ranking, and Hunter-Anderson's study has addressed similar problems. Last, Pickering and the Hansons' research related to general mortuary patterns and social correlates.

#### Palau

Pure research in Palau since 1977 includes the following:

- (1) 1977 and 1978, Jun Takayama - test excavations on Kayangel Atoll and on the islands of Koror, Ngarenggol, Ngurkthabel, Pelilieu, and Angaur (Hayakawa and Takayama 1979; Takayama 1979);
- (2) 1980 and 1981, George Gumerman and several graduate students (Southern Illinois University)- survey and test excavations in Airai (Babeldaob island: Gumerman, Snyder and Masse 1980);
- (3) 1980-81, Laurie Lucking (Ph.D. student, University of Minnesota) survey and test excavations on Babeldaob;
- (4) 1980, myself, Madison Nena, and the Palau Office's staff - survey in Aimelik (Babeldaob).

Takayama's work has yielded some dates - e.g. A.D. 800s for the earlier deposits in a Ngarenggol site in the Rock Islands and A.D. 0-100 from a Kayangel Atoll site. One of Gumerman's foci is the reconstruction of exchange systems. Pottery composition analysis has had initial success. Gumerman's research is planned to be a multi-year project, and will involve a number of graduate students. Lucking's work is on agricultural systems - specifically the elaborate terrace systems associated with most prehistoric villages

on Koror and Babeldaob. Our survey in Aimelik has studied the settlement patterns at Ngerkai, the former 'capitol' village of this area of Palau. Our survey results are to serve as the basis for a historic settlement park.

Construction research in Palau has largely consisted of small projects checked by the Palau office of the Historic Preservation Program. The new Palau Airport in Airai, however, has required outside help. Survey work was done by Patrick Kirch in 1978 and by Scott Russell and myself in 1979. My work focused on village settlement patterns in two villages. Salvage excavation done in agricultural terraces by Lucking in 1979 and 1980 indicated they had been built to catch and retain water, perhaps for taro. One small project on Koror (by myself and Moses Sam of the Palau office) identified settlement patterns in Ngerbechedesau Village. Last, a historical study of building locations in Koror during Colonial times is being conducted by Paul Ehrlich.

#### General

Three general projects are directly relevant to archaeological research in Micronesia. In 1978-79, Fr. Francis Nezel (Micronesian Seminar) prepared a volume itemizing ship contact in each area of the Trust Territory from European Contact through the late 1800s (Hezel 1979). Since 1979, translation of the German Südsee Expedition volumes into English has been funded. Work is being done by translators (Ruth Runeborg and Elizabeth Murphy) at the Pacific Islands Studies Program (University of Hawaii) under the direction of Robert Kiste. To date, the Marshalls' volume and the three Ponape volumes have been translated and work is underway on the two Kosrae volumes and a Truk volume. Plans call for the initial publication of these volumes in the near future.

Another grant was awarded to the Bishop Museum (Yoshihiko Sinoto, Principal Investigator) to translate pre-World War II Japanese anthropological research into English. In 1979-80, a large number of articles were translated. It is hoped these too will be published in the not-too-distant future.

#### SUMMARY

Clearly, the amount of archaeological information from Micronesia has vastly increased over the last several years. Areal coverage has greatly improved and a wide range of research topics have begun to be addressed. Yet this work is only a start.

In the study of origins, we have begun to push back our dating and have a better knowledge of assemblages at different points in time. However, early sites and assemblages are only firmly established for Truk and the Marianas. The Truk material tentatively indicates the meeting of the two major flows of Micronesian settlement (western versus eastern) ca. 400-100 B.C. Earlier sites should

exist in Ponape, Kosrae, and the Marshalls, but they have yet to be found - although dates from Ponape and the Marshalls are firmly back to A.D. 400 and A.D. 0, respectively.

We now have an excellent picture of late settlement patterns for all major islands. These patterns, however, are only initial stepping stones in the analysis of other research problems - activity area analysis, resource exploitation, social organisation, population growth, hierarchical development, etc. Resource exploitation studies are receiving close attention in Ponape and Palau at this time. Population reconstructions have received initial study on Kosrae and Yap, and the development of hierarchical societies is being analyzed on Yap, Ponape, and Kosrae.

In retrospect, the last 4 years have been an exciting time in Micronesian archaeology. Field data have phenomenally increased. More research problems have been addressed by a large number of new researchers with new ideas. And ideas have been readily shared. I hope that this atmosphere of co-operative and intensive research will continue.

The Historic Preservation Office has been the key to the success over the last few years. It has provided results - through overall planning, reliable funding, logistical aid, and its own research. Further, it has been involved in related endeavors not mentioned in this paper (helping create local legislation, searching for outside funding, planning for the future, etc.). Yet the Historic Preservation Program is in a precarious situation at the moment. Termination of the Trusteeship rapidly approaches. Plans have been made to move the central professional office to the Federated States of Micronesia, forming an Institute for Micronesian History and Culture staffed by qualified local citizens with professional degrees. (The local offices will continue much as they are). The Institute staff were to be appointed this year, and it was hoped funds would be received from the United States for a limited number of years to get the Institute on its feet. However, funding is now shaky. The U.S. negotiators wish to limit federal funding to the emerging nations. Special historic preservation funds may not be granted. Negotiations are ongoing, with prospects presently not good. Until solid funding appears, no appointments will be made, and the Institute is in limbo. And as the Institute goes, so could the Historic Preservation Program, for a professionally staffed central office is crucial to aid local officers' research and to fund and assist outside research. Accordingly, the amount of research could rapidly drop off.

#### FOOTNOTES

1. Japan's Ministry of Science has funded a few projects, several of which have also had some aid from the Trust Territory Historic Preservation Office.

2. Up-to-date lists of publications of the Micronesian Archaeological Survey can be obtained from the Historic Preservation Office, Office of the High Commissioner, Trust Territory of the Pacific Islands, Saipan, C.M. 96950.
3. This interpretation of slash and burn agriculture is not firm, and analysis is ongoing (Haun, personal communication 1980).

#### REFERENCES

Only published reports are noted in the References. A large number of manuscripts are on file at the Trust Territory Historic Preservation Office in Saipan and are scheduled for publication. The Bishop Museum and Pacific Studies Institute will also be printing several reports this year in their monograph series.

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