Bioarchaeology in Guam: Trends and Current Conditions

Julie K. Euber and James M. Bayman

Introduction
In the coming years, the American military base on Guam will expand and subsequent construction will mean more opportunities for archaeological projects than in the past (Map 1). With this in mind, it is important to determine which information collected from human skeletal remains will benefit future question-oriented bioarchaeological research. An informed decision on what data to prioritize requires knowledge of past studies of Guam and a vision of how bioarchaeology can benefit our understanding of Guam's past. In this study, I compiled publications employing methods from bioarchaeology and physical anthropology and analyzed thematic trends pertaining to Guam's past. Based on the results, I then suggest several potential avenues for future bioarchaeological studies and explore the plausibility of a database that would include Chamorro mortuary and skeletal information.

Materials and Methods
One hundred and seventeen publications were surveyed and assigned to one of ten categories in which they best fit (Chart 1). Categories were constructed after most articles had been collected and I had an understanding of general patterns within the literature. The category of site reports with skeletal analysis is removed from consideration at times due to the sheer number of site reports from Guam. While I was able to view all site reports from 1959-1991 and 2003-2007 housed at Guam's State Historic Preservation Office, time would not allow a systematic examination of site reports from other years and therefore the site report count may be biased. The review focuses on publications with research questions specific to prehistoric and early colonial Chamorro populations: Studies of populations from a broader geographic region than Guam were considered outside the scope of this study.

Chart 1: Eleven Categories of Publications on Physical Anthropology and Bioarchaeology in Guam

- **Category**
  - Paleopathology
  - Social Complexity/Organization
  - Line of Evidence
  - Literature Review
  - Biodistance
  - Diet
  - Paleodemographics
  - Musculoskeletal Markers (MSM)
  - Catalog
  - Osteobiography
  - Site Reports

- **Description of Category**
  - Studies of ancient disease and health
  - Tests hypotheses on social structure and relationships between people and groups using the mortuary context
  - Skeletal/mortuary analysis used in conjunction with other lines of evidence from archaeology, ethnohistory, etc. to test a hypothesis
  - Reviews literature on the physical anthropology of bioarchaeology of Guam
  - A study of the genetic distance between or within human populations
  - A study of what people were eating and differences in diet between individuals
  - A study of population composition
  - Impressions on bones from compensating for the overall size of muscles
  - Lists and describes skeletal remains available to study
  - Overview of life and death of one individual from the skeletal remains
  - Site Reports that include skeletal analysis

Graph 1: Number of Publications in Each Category on the Physical Anthropology and Bioarchaeology of Guam

Graph 2: Number of Publications by Decade Excluding and Including Site Reports with Skeletal Analysis

Graph 3: Publications by Category from the 1990s to Further Understand the Increase in Publications during this Decade

Discussion
Publication types most common in the 1990s suggest a movement toward research going beyond the description of skeletal remains and the first level of analysis (sex, age, etc.). Still, future studies of skeletal remains that consider cultural context on a regional scale would greatly further bioarchaeology's contribution to the study of the ancient Chamorros:

- A dearth in bioarchaeological research exploring temporal variation limits our understanding of the longevity of cultural phenomena and also places an undue emphasis on how Chamorros society operated when Europeans first made contact by relying on ethnohistoric texts to interpret ancient practices.
- Studies of variation in skeletal and mortuary data between different archaeological sites on Guam will improve our understanding of relationships and continuity throughout the island. No single site was isolated during occupation, and therefore studies of single sites may overlook major patterns by ignoring surrounding sites.
- By performing skeletal analyses and considering mortuary context, one is able to address questions at the individual level. Therefore, bioarchaeology is well suited to address issues of identity. The potential for understanding how individuals operated within ancient Chamorro society using bioarchaeological data is relatively unexplored and warrants further analysis.

In order to take these approaches in the future, a database of ancient Chamorro skeletal remains and their local and regional mortuary contexts would be crucial. Before embarking on such a project, one must consider if enough information has been recorded in reports of the excavation of skeletal remains for the project to be both plausible and sufficiently useful. In two days of reading through site reports at Guam's State Historic Preservation Office, two people were able to read through seven years of reports and find 52 burials to catalog in a database prototype. The level of description available varied from reports that only mention a burial was found to reports that recorded a wide variety of characteristics including skeletal and mortuary data. This suggests that constructing a database would be both plausible and beneficial to our field.

To view the list of references utilized in this study, share comments or ask questions, please contact Julie K. Euber (jueber@hawaii.edu)

Thanks to the following groups and individuals:
- Jelene Lapo
- Micronesian Area Research Center
- Guam's State Historic Preservation Office
- Ifanalan Chant Group
- UOG Graduate and Professional Student Association
- University of Hawaii Manoa and University of Guam's Archaeological Field School 2005