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The Physical Anthropology of Micronesia: a Brief Overview

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Introduction

Compared with the other fields of anthropology, there have been relatively few studies in Micronesian physical anthropology (Howells 1973). Some early anthropometric work has been done, primarily by German (e.g., Hambruch 1909, Schlaginhaufen 1929) and later, by Japanese (e.g., Hasebe 1938) anthropologists. According to Hunt (1950), the work by Hasebe is one of the most extensive anthropometric surveys of living Micronesians ever made. Unfortunately, except for a single English translation mentioned in Hunt (1950), the latter's work is published in Japanese.

Reports of skeletal (mostly cranial) remains from the region (e.g., Krause 1881, Virchow 1881, Arai 1941, Schlaginhaufen 1906) accompany these early studies of living Micronesians. Human remains from Micronesia have always been few in number and underrepresented in museum collections. The largest skeletal series from Micronesia is from Guam, material excavated by Hornbostel and Thompson which is currently curated by the B. P. Bishop Museum in Honolulu. For the rest of Micronesia, there are only a few specimens representing some of the major island groups (Pietrusewsky 1986).

The relatively extensive early blood group work done in Micronesia is summarized by Hainline (1966).

Hunt's prediction of a dramatic increase in publications and research in Micronesian anthropology following World War II has not been realized in studies in physical anthropology (Hunt 1950). A few anthropometric surveys (cited by Hunt 1950) were initiated on Kapingamarangi, Guam, Ulithi, Ponape and Yap, but long-term commitments to these and other promising studies of Micronesian physical anthropology generally have not been fully realized.

The post-war literature in Micronesian physical anthropology includes studies in dermatoglyphics (e.g. Mavalwala & Hunt 1964, Hunt & Mavalwala 1964), some eloquent work in population genetics in the Eastern Caroline Islands and other parts of Micronesia by Morton and colleagues (Morton *et al.* 1971, Morton & Lalouel 1973, Morton & Yamamoto 1973, Morton & Keats 1976, Imazumi & Morton 1970, Pollock *et al.* 1972), studies in human biology (Hunt 1958, 1966, Hunt *et al.* 1954, Greulich 1951), and the extensive contributions by Underwood (e.g., Underwood 1973, 1976) in historical and genetic demography. Finally, there has been intensive work with neurodegenerative disorders such as amyotrophic lateral sclerosis, or ALS, in the western Pacific by Garruto and others (e.g., Garruto 1984, Garruto & Yase 1986). Overall, the work in Micronesian

physical anthropology has been sporadic and often restricted to a single region within Micronesia.

Session Papers

The opportunity to organize a session in the physical anthropology of Micronesia allows us to assess, once again, the state of research for this long neglected region of the Pacific and to make recommendations for future research in the field. The list of participants in this session and their contributions attest to the vigor and strength of research in Micronesian physical anthropology. Included are scholars long associated with research in Micronesian and Pacific physical anthropology as well as those who are relatively new to the field. While contributions by geneticists and human biologists are few, the present sampling is relatively accurate reflection of the current work in Micronesian physical anthropology.

Not unexpectedly, the papers in this session cover a fairly wide range of interests ranging from studies of skeletal and dental remains to census data collected on living people. Four of the papers (those by Howells, Brace, Turner and Pietrusewsky) are concerned with identifying Micronesian origins using multivariate statistical procedures.

Howells' paper examines craniometric variation in the Pacific and the World and specifically considers the position of pre-contact Guamanian skulls in the context of East Asians and the significance these have for identifying the ancestors of Micronesians. Brace and colleagues, using measurements of teeth and the craniofacial skeleton, assess the relationship of Micronesians *vis-à-vis* the surrounding populations of the Pacific and Asia. The suggestion of a possible association with Jomon populations of prehistoric Japan is both provocative and unexpected. Turner's paper approaches the similar problem of ascertaining the origins and affinities of Guamanians and other Micronesians through the application of the Mean Measure of Divergence (MMD) statistic and cluster analysis to dental non-metric data recorded in Micronesian, Oceanic and Asiatic samples. Pietrusewsky examines the internal as well as external relationships of Micronesians through the application of stepwise discriminant function analysis and Generalized Distance to cranial measurements recorded in Micronesian and circum-Micronesian crania. The latter sample represents one of the largest samples of Micronesian crania currently available in museum collections.

There is overwhelming unanimity in the conclusions reached by all four investigators. All lines of evidence support a non-Melanesian source and origin of the Micronesians and Polynesians. Together, these papers provide convincing evidence of a marked biological differentiation between Micronesians (and Polynesians) and Melanesians (and Australians), a division which strongly negates the possibility that the former could have been derived from the latter.

Similar views have been expressed in the past for Polynesians (e.g., Howells 1973, 1979, Turner 1985, 1986, Brace 1981, Pietrusewsky 1985). This is the first time an equally strong case has been presented for the origin of Micronesians. While opinions on the exact origins of Micronesians and Polynesians (e.g., Turner suggests Borneo and Brace currently favors Jomon populations of Japan) may differ, there is complete agree-

ment that Micronesian (and Polynesian) origins are definitely non-Melanesian and from a source farther west.

Whatever the ultimate and ancestral origin of Micronesians was, Underwood's contribution serves to reiterate the importance of considering ecological as well as demographic influences on population size and density in Micronesia and the possible effects these have had on the descendants of the initial colonists of the region. Working with historical demographic and population census data from Guam, Underwood identifies a distinctive fertility pattern among Guamanian women which has some obvious and far-reaching consequences for population history in Micronesia and the Pacific, in general. We are further reminded upon reading this paper of the need to develop a more ecologically and demographically oriented framework within which the results of sometimes very different kinds of data and approaches used in the study of Micronesian physical anthropology can be integrated.

Hanson's paper superbly summarizes the results of his careful examination of archaeological human skeletal remains from Rota in the Mariana Islands. Examining mortuary data within the context of existing epidemiological models for island populations, his contribution illustrates the wealth of information studies of osseous remains of non-living populations can yield. Studies such as these provide direct evidence of the ever-changing selective processes which have shaped the biocultural characteristics of prehistoric Micronesians and Pacific Islanders.

Recommendations and Conclusions

Based on the sampling of papers presented in this session and the recent literature in Micronesian physical anthropology, some observations and recommendations for future research in the field are suggested.

1. It is hoped that researchers will follow Underwood's lead in developing a more ecologically and demographically oriented perspective in future studies in Micronesian physical anthropology.

2. Given the scarcity of human skeletal and dental remains from Micronesia, larger and better provenienced samples of archaeological human remains are required. Such material will add immeasurably to our understanding of human settlement and behavior of prehistoric Micronesians. Through the formulation of deductively testable models of biocultural interaction and behaviour patterns, we will be better able to construct local culture histories, settlement patterns and the development of complex societies on high islands. It is anticipated that mortuary site archaeology, involving the study of adequate samples of human skeletal and dental remains will contribute to our understanding of microevolutionary changes, health, nutritional standards, demography, socioeconomic status and the like for these now deceased populations. For this reason, it is hoped that future proposals for archaeological research will include a human biological component in their research design or, at the very least, those who excavate human remains will ensure that they are studied by qualified human osteologists.

3. With larger samples of human reamins from many different parts of Micronesia, studies such as those pioneered by Howells and Pietrusewsky using craniometric data,

Brace using dental and craniofacial measurements and Turner using non-metric features of teeth will further our understanding of Micronesian affinities and origins. With the possible exception of Guam, we have very few skeletal remains from Micronesia.

4. Finally, more work by human biologists and geneticists who examine HLA, blood antigens, mitochondrial DNA and other biochemical attributes among living Micronesians is needed.

In conclusion, with additional work in biological anthropology and the continued cooperation and collaboration of archaeologists and physical anthropologists, the void which has until now characterized Micronesian physical anthropology will be filled.

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