Geographical Influences on Health in Ancient Mariana Islanders

Michele Toomay Douglas\textsuperscript{1}, Michael Pietrusewsky\textsuperscript{1}, Marilyn K. Swift\textsuperscript{2}, Randy A. Harper\textsuperscript{2}, Michael A. Fleming\textsuperscript{2}

\textsuperscript{1} Department of Anthropology, University of Hawai‘i at Manoa
\textsuperscript{2} Swift and Harper Archaeological Resource Consulting, Saipan

SYMPOSIUM: ENVIRONMENTAL CHANGE AND PAST HUMAN RESPONSES: HUMAN-ENVIRONMENTAL INTERACTIONS INSCRIBED ON THE SKELETON
Chairs: Sian Halcrow and Gwen Robbins Schug

Mariana Islands
Oakland Symposium 1995

An Assessment of Health and Disease in the Prehistoric Inhabitants of the Mariana Islands

MICHAEL PIETRUSEWSKY, MICHELE T. DOUGLAS,
and RONA M. BREA-QUERIAL
Department of Anthropology, University of Hawaii-Manoa,
Manoa, Honolulu 96822

KEY WORDS: skeletal biology; dental pathology; paleopathology;
paleodemography; Micronesia
Chamorro
# Mariana Islands Prehistory

<table>
<thead>
<tr>
<th>Phase</th>
<th>Approximate Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Latte</td>
<td>1500 BC – AD 400</td>
</tr>
<tr>
<td>Transitional Pre-Latte</td>
<td>AD 400 – 900</td>
</tr>
<tr>
<td>Latte</td>
<td>AD 900 - 1700</td>
</tr>
</tbody>
</table>

- **Little Climatic Optimum (AD 1000-1300)**
- **Little Ice Age (AD 1300-1850)**

Photos: George Anson/Guam Public Library System
### Skeletal Series

<table>
<thead>
<tr>
<th>Island</th>
<th>No. Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rota</td>
<td>66</td>
</tr>
<tr>
<td>Tinian</td>
<td>37</td>
</tr>
<tr>
<td>Saipan</td>
<td>110</td>
</tr>
<tr>
<td>Guam</td>
<td>172</td>
</tr>
<tr>
<td>Total</td>
<td>385</td>
</tr>
</tbody>
</table>
Indicators of Stress
(Health, Diet, Lifestyle)

- Non-specific
  - Cribra orbitalia
  - Linear enamel hypoplasia (LEH)
  - Stature
- Specific
  - Limb bone fractures
  - Spondylolysis
  - Infection
  - Dental pathology

FET & Student’s t-test
Cribra Orbitalia
Stature
Trauma
Infection (Yaws)
Betel-nut Staining
Dental Pathology (Tinian & Saipan)
Dental Pathology
(Guam & Rota)
Dental Pathology (Guam & Tinian)
Alveolar Defects
Conclusions

• No significant differences in stature, fractures, infection & alveolar defects
• Treponemal disease
• Childhood stress (CO & LEH) significantly different
• Dental health good
• Betel (Areca) nut chewing
• Prehistoric inhabitants on Guam more healthy
• Guam < Tinian < Rota < Saipan
Acknowledgements

- Sian Halcrow & Gwen Robbins Schug
- Vincent Sava
- U.S. Capital Improvement Funds, CNMI
- Marween Yagan, CI S, UHM