Title
Peter B. Cornwall Collection Assessment

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THE PETER B. CORNWALL COLLECTION
P.A. HEARST MUSEUM OF ANTHROPOLOGY
COLLECTIONS ASSESSMENT

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The Dilmun Bioarchaeology Project recently completed a research assessment of the Hearst Museum's Peter B. Cornwall Collection. We have made several exciting, yet preliminary observations about these materials. This letter will present these findings as well as describe our plans for further research and dissemination.

Introduction – The Dilmun Bioarchaeology Project

The Dilmun Bioarchaeology Project (DBP hereafter) is a joint team of scholars drawn from UC Berkeley and Sonoma State University. The team currently consists of seven people. Benjamin Porter is an assistant professor of Near Eastern archaeology in UC Berkeley's Near Eastern Studies Department and a curator of Near Eastern archaeology in the Hearst Museum of Anthropology. Alexis Boutin is an assistant professor of anthropology at Sonoma State University. Colleen Morgan, Alan Farahani, and Amber Zambelli are graduate students in UC Berkeley's Anthropology department, Ancient History and Mediterranean Archaeology program, and Near Eastern Studies Department, respectively. Sheel Jagani is the team's undergraduate research apprentice and is earning two majors in Anthropology and Integrative Biology. Kathryn Killackey serves as project illustrator and Athna May Porter serves as the project family historian. Despite the obvious differences in academic rank, the team organizes itself as an egalitarian research group who encourages and appreciates each member's unique contributions to our collective goals. This team will certainly grow in the coming years as we identify new needs beyond our current talents.

During the research assessment stage, this team divided itself into four research groups: 1) Collections history (Porter, Porter, Jagani), 2) skeletal analysis (Boutin, Jagani), 3) object analysis (Porter, Farahani, Morgan, Jagani, Killackey), and 4) dissemination (Morgan, Farahani, Killackey). The results of each research group are presented here.

Collections history

How the Cornwall collection came to reside in the Hearst's collection was one primary question the collections history group set out to answer. The museum's accession file as well as published academic literature were key resources in this regard. Through archived correspondence, we learned that beginning in 1940, Peter B. Cornwall, a graduate student at Harvard University, sought institutional affiliation and field research funding from the Hearst Museum to conduct excavations and surveys in what was broadly called 'Arabia' at that time. Although Alfred Kroeber, Theodore McCown, and Edward Gifford granted Cornwall institutional affiliation and professional mentorship, they did not offer him funding beyond the cost of shipping materials to California. Despite some delays due to World War II-related events, Cornwall conducted his field research in late 1940 and early 1941. Upon returning to the United States, Cornwall studied many of these materials, publishing portions of the data in his 1944 Ph.D. dissertation, *The history of Bahrein Island before Cyrus* and other scholarly and public journal articles.

After recovering the skeletal remains, Cornwall coated them with shellac while still in the field. After they were shipped to his home in Marin County, he apparently carried out some restoration of fragmentary bones and artifacts. According to the museum's doorbook and accession sheet, the entire collection was deposited in the Hearst in December 1945, under the

accession number 831. An inventory of its contents was completed in September 1949, according to a letter from the Hearst to Cornwall. Some correspondence between Gifford and Cornwall suggest that Cornwall was to help unpack and inventory the materials, but this did not happen despite repeated requests. Correspondence with Cornwall about the collection ends in 1952.

A trial catalogue sheet dating to September 1965 indicates that Grover Krantz, who was then a physical anthropologist employed at the Hearst, catalogued the skeletal materials. At the time of this writing, there is no record that a similar act was carried out on the objects, although there is reason to suspect that there was. Given the museum protocol during the 1960s, it is likely that the catalog number was written on each object and bone at or around the same time as Krantz's work. The materials and the drawers in which they are housed also provide some information about their management by the Hearst Museum staff since they were stored there in 1959, when the current museum facilities were built. For example, a sequential number was written on each of the drawers; at some point after this, a fresh label was stapled to each drawer. The collections managers report that spot checks are done periodically in order to comply with pest management protocols and security. The skeletal materials were inventoried during the museum's efforts to be NAGPRA compliant during the 1980s and 1990s, although funds were not available for their curation (i.e., osteological analysis). Currently, one individual (museum no. 12-10146) is on loan to UC Professor and Hearst Curator Tim White, where it is used in a skeletal pathology teaching collection. Michael Black, the manager of the museum's information systems, has incorporated inventories of all skeletal material in the Hearst Museum into the Osteoinformatics database.

The group's second charge was to study available documentation to define the collection's spatial and geographic parameters. According to his notes and correspondence, Cornwall excavated and surveyed in regions that once comprised the ancient polity of Dilmun, but are today the modern kingdoms of Saudi Arabia and Bahrain. He obtained permissions both from local governing authorities and Standard Oil, who had oil exploration rights to some of these territories. According to his descriptions, Cornwall surveyed several prehistoric settlements throughout central and eastern Saudi Arabia. Cornwall also worked in Bahrain, excavating a Roman bath and thirty-five tumuli around the island. From the latter, he recovered a number of skeletons and associated objects. Cornwall also mentions that he recorded geological and environmental data during his travels. He also took physical measurements on local populations as he held an interest in anthropometry, the measurement of individuals for the study of human physical variation.

The group's third question was biographical in nature: Who was Peter B. Cornwall? The accession file as well as public documents have helped piece together Cornwall's biography. Cornwall was a Bay Area native born in 1913 to a family with long-standing privilege and connections in northern California. At some point in his life, Cornwall lost his hearing and could only communicate through writing. Peter's grandfather, Pierre Cornwall, was involved in nineteenth century California industry and development; he later served as a Regent of the University of California. Peter's father, Bruce Cornwall, was a Cal law school alumni and a successful real estate salesman. Peter Cornwall attended Phillips Academy in Andover, MA and went on to study at Stanford University, the University of Toronto, and Oxford University, finally earning his bachelor of arts in 1939. According to his cv, he showed an interest in Near Eastern and Mediterranean archaeology and history throughout his education. During the 1930s, Cornwall participated on excavation projects in Greece, Egypt, and Malta. After completing his

doctoral studies at Harvard University in 1944, Cornwall appears to have been based in the Bay Area, traveling abroad frequently. At the moment, nothing is known of Cornwall's activities in the last two decades of his life. In 1952, he reports that he is moving to his residence in Rome. According to cemetery records, Cornwall died in Rome in 1972 at age of fifty-nine. His body was shipped back to the family cemetery near Palo Alto, CA. Records suggest he never had children. Our attempts to identify Cornwall's living relatives have been unsuccessful so far.

Skeletal Analysis

During the Spring 2009 semester, the skeletal analysis team focused on creating a preliminary inventory of skeletal remains, with the aim of evaluating the collection's research potential. So far, we have been able to estimate the minimum number of individuals (MNI) represented in the Cornwall collection, obtain a sense of the sample's demography, health, and behavior, and track burial patterns (e.g., single vs. multiple interments, burial taphonomy).

Approximately 24 burial features are represented: one jar burial, two features in a "small cemetery locality," and 21 tumuli. Only one tumulus has individuals represented from multiple cists. The remains of at least 32 individuals are present in the Cornwall collection (MNI=32). The vast majority of burial features appear to have been single interments (n=20), with three double burials, and two multiple burials. At least 13 of the burial features included faunal remains.

Inventory data have been used to estimate the completeness of the 32 skeletons, which conveys the possibilities and limitations of the Cornwall sample, based on preservation issues. Overall, 34.4% of the skeletons were mostly complete, 12.5% were fairly complete, and 53.1% were fragmentary. Although the proportion of mostly complete skeletons may seem low, we observed further that the majority of these were very well preserved, i.e., major bones and diagnostic features were extant and intact. Preliminary estimates of sex revealed ten possible or probable males and six possible or probable females. An age assessment of twenty-eight individuals revealed a majority of adults (n=20; 71.4%) with some older adolescents (n=3; 10.7%), children (n=2; 7.1%), and infants (n=3; 10.7%). Several pathologies are exhibited at high frequencies, including antemortem tooth loss, degenerative joint disease, and Schmorl's nodes. A handful of seemingly isolated pathological conditions also require further study and research, as well as confirmation of diagnosis. These include a healed depressed fracture of the cranium, a traumatic injury to the medial epicondyle of the humerus, and a congenital growth defect.

Object Analysis

The goal of the object analysis team was to create a preliminary inventory of artifacts. Some of these artifacts are associated with the skeletal evidence from Bahrain described above. Other objects are from surface collections in what is today Saudi Arabia's Eastern Province (*Mintaqah ash-Sharqiyah*). Overall, the collection is well preserved. Cornwall appears to have conducted object restoration when possible. Other specimens are fragmentary, as is common for excavated materials. The DBP has collected descriptive data (dimensions, color, condition) from approximately 50% of the collection, with concentration on complete ceramic objects and all

non-ceramic and non-stone objects. Many of these objects were photographed and several are now being drawn.

The survey revealed that the collection contains objects made from several different types of materials, including metal, bone, ivory, pearl, shell, and alabaster, although stone and ceramic are the dominant material types. Representative forms include vessels, jewelry, and tools. Comparing these objects to examples already published in the secondary literature helps provide relative dates for the collection. So far, the team has determined that the overall collection represents several different time periods from the region, the oldest being prehistoric Paleolithic or Neolithic, with the youngest material dating to the tenth century CE. A preliminary analysis of objects found in context with skeletal materials provides relative dates from the late third millennium BCE to the end of the first millennium CE.

Documentation and Dissemination

One of the DBP's main goals is to increase the transparency of the archaeological process. To be successful, therefore, the project has organized a documentation and dissemination team that uses different technologies to record our work. Documentation, takes on several forms, from written to digital, from notebooks to databases and video. During the research assessment, the documentation and dissemination team piloted several projects using inexpensive or free resources. Digital photographs of all analyzed objects and some skeletal materials were taken and archived. Free, online digital software including Google Docs and Picasa allowed team members to share their work and facilitated communication between the research groups. Video documentation was taken of the objects group 'at work' and was edited into a short video 'webisode' for a public audience. Permission to photograph and use these images for research purposes was granted by the Hearst Museum. Also, a project website with a blog was established at http://bbproject.wordpress.com/. So far, posts to the blog have included profiles of team members, progress reports on skeletal analysis, and abstracts submitted to scholarly conferences. We have also shared the DBP's ethics statement on the blog, in hopes of soliciting feedback from interested readers. Although it is a working document, it outlines our intentions and hopefully will provide a model for future practice with collections of this type.

Research Assessment Outcome and Upcoming Plans

The DBP is pleased with the outcome of the research assessment and are optimistic about the collection's research potential. In a recent meeting, DBP team members outlined several additional steps for future research, which will commence during the Fall 2009 semester.

Collections history

In order to better understand Peter B. Cornwall's personal and professional motivations in collecting this material from Bahrain and Saudi Arabia, the DBP plans to continue gathering biographical information. Prospective sources include yearbooks from Cornwall's undergraduate education at Stanford, photographs of his Bay Area homes, published obituaries, and his gravestone. We will also plan to contact a number of institutions in Italy for any record of his residency and eventual death there. We also plan to consult with Harvard's Peabody Museum of Archaeology and Ethnology for additional documentation on Cornwall's graduate studies.

We aim to re-situate Cornwall's excavations within local geographic and archaeological contexts by establishing their provenience. Although he did not systematically document their locations, his field notes and the information that he did publish should prove sufficient to reconstruct his general areas of excavation. We hope to refine these areas by consulting archival material from Standard Oil's operations in the region, as well as any aerial photographs of Bahrain and Saudi Arabia from the 1930s and 1940s. Using this available documentation, we will then integrate the location of Cornwall's various excavations into a Global Information Systems environment. This work will allow us to make typological comparisons between the Hearst's Cornwall collection to sites whose evidence has already been published (e.g., the "type sites" of Qa'alat Bahrain and Saar). As described further below, this will likely involve consulting and collaborating with representatives from Bahrain's and Saudi Arabia's antiquities authorities.

Skeletal Analysis

The next task for the DBP's skeletal analysis team is to confirm and finalize the inventory of human remains in the Cornwall collection. To accomplish this task, the DBP plans to work closely with Michael Black: first, to draw on existing inventory data on the Cornwall collection that may be present in Osteoinformatics, and second, to integrate the findings of our osteological analyses into Osteoinformatics. Once this is completed, the collection of detailed morphological and metric data from the skeletal and dental material will commence. These data will allow us to assess personal and population demographic attributes such as age, sex, health and nutritional status, and activity patterns. This work is projected to take no more than four semesters.

Additional researchers will join the skeletal analysis team during the DBP's duration. The small assemblage of animal remains will require us to add a faunal specialist. We are currently consulting with colleagues and graduate students at Sonoma State and UC Berkeley to fill this position. New undergraduate researchers also are scheduled to join the team starting in the fall. Amy Brandon and Bianca Brenes are incoming senior Anthropology majors at Sonoma State who plan to pursue graduate studies in physical anthropology. Their relevant coursework and field experience make them valuable additions to the project.

Three skulls from the Cornwall collection are prime candidates for facial reconstruction, based on their overall excellent preservation, especially of the cranium (with nasals) and mandible. These include a possibly female adult, a possibly male adult, and a child/young adolescent. Facial reconstruction of selected well-preserved skulls from the Bahraini tumuli will "flesh out" our explorations of these embodied persons. Each reconstructed face's final appearance will be informed reflexively by historical and iconographic data from its contemporary society (e.g., hairstyle, costume) and lifestyle information from the individual himself (e.g., age at death, pathologies, markers of occupational stress). Facial reconstruction is a particularly effective tool for outreach to public audiences. By "putting a face" on the ancient people of Dilmun in a way that is much more vivid and tangible to the island's modern residents than a skull or stylized drawings, such facial reconstructions can facilitate indigenous peoples' pride in their physical identity and cultural heritage.

The completeness and excellent preservation of many skeletons in the Cornwall collection make them well-suited for interpretation via the osteobiography method. This method pursues the meaningful interpretation of skeletal material in its archaeological contexts, with the aim of reconstructing the life histories of individuals. Although osteobiographies are traditionally framed as exhaustive skeleton-by-skeleton descriptions, Boutin has found through her research that fictive narrative is the most effective writing format. Fictive osteobiographical narratives permit humanistic, even experiential, interpretations of skeletal data that are necessarily interlinked with all available archaeological, textual, and iconographic contextual information. Consistent with the DBP's aim to disseminate our research findings widely and in an accessible fashion, fictive narratives are more comprehensible and interesting to the public than traditional anthropological reports. They are also written in a way that makes transparent the contingency, dialogue, ambiguity, and collaboration that are inherent to the production of archaeological knowledge.

Object analysis

Building on our work this past spring, the object analysis team will commence its final inventory of artifacts in the Cornwall collection. This work will include collecting descriptive data on the remaining 50% of the collection, as well as illustrating and photographing individual objects. These data will then be compared with other published materials. We also seek to add a researcher for the description and detailed analysis of the collection's metal and stone artifacts. This work is projected to take two semesters.

Should we prove successful in securing external funding, the DBP would like to conduct non-destructive materials scientific testing on some objects with the Hearst's permission. This includes sampling bitumen residue on the inside of some intact vessels for the purposes of sourcing, and obtaining radiocarbon samples from soil associated with a fragmentary infant cranium (Reg. No. 9-4622).

Documentation and dissemination

The DBP plans to continue photographing, filming, and/or drawing all diagnostic artifacts and skeletal materials in the Cornwall collection. These illustrations will be used for publication, presentations, and digital distribution. The DBP will seek further permission from the Hearst Museum for use of these images as warranted. Also, a copy of all images will be deposited in the museum's records.

We are in the process of forming a council of specialists in Gulf archaeology and/or the analysis of human skeletal remains who will advise the DBP on research, grant writing, and publications. Candidates for this advisory committee include Daniel Potts (U of Sydney), Peter Magee (Bryn Mawr), Flemming Højlund (Moesgard Museum), Gregory Possehl (U of Pennsylvania), Susan Sheridan (U of Notre Dame), Bruno Frohlich (Smithsonian), and Judith Littleton (U of Auckland). We are also looking for individuals from Bahrain and Saudi Arabia who can serve on this board.

We plan to disseminate our findings to various interested publics through several channels. We will start updating our blog regularly with status updates on object and skeletal analysis, as well as photographs and webisodes of the teams at work. At later stages of the project, we envision incorporating the osteobiographies described above, as well as a database of objects and skeletal remains. Translation of parts of the blog into Arabic, so that it is accessible to Bahraini and Saudi residents, is another goal of the project. We also hope to give presentations in brownbag lectures series hosted by Cal's Archaeological Research Facility and at Sonoma State's School of Social Sciences, respectively.

In addition to the efforts just described, we plan to disseminate our findings to Middle Eastern audiences, particularly those in Bahrain and Saudi Arabia. The first step in this regard, which is one of the project's highest priorities, is to make contact with local antiquities authorities and national museums in Bahrain and Saudi Arabia, to notify them of the existence of their cultural patrimony in the Cornwall collection. We also would like to collaborate with them to ensure that our findings are made available and relevant to Gulf audiences, whose interests in archaeological research continue to grow. Should we secure sufficient external funding, the team would like to make a personal visit to the region, both to build ties with local antiquities authorities and to experience the landscape explored by Cornwall. Bahrain hosts several newspapers (e.g. *Akhbar al-Khaleej* and *Gulf Daily News*) where our study can be presented to Arabic- and English-language readers in an accessible, public voice. We envision a possible culmination of our project as a conference of interested scholars at Berkeley and/or Bahrain, perhaps in conjunction with a museum exhibit of select materials from the Cornwall collection and the facial reconstructions proposed above.

One of the primary means of dissemination to academic audiences will be through presentations at scholarly conferences. Several members of the team (led by Morgan) will present a paper at UMAC's 9th International Conference, "Putting University Collections to Work in Research and Teaching" in September 2009. An abstract also has been submitted to the 7th International Congress on the Archaeology of the Ancient Near East, to be held in London during April 2010. We also plan to present the results of our research at professional meetings such as the American Schools of Oriental Research (ASOR) and the Society for American Archaeology.

Aspects of the DBP's research findings will be published in peer-reviewed journals like the *Bulletin of the American Schools of Oriental Research*, *Arabian Archaeology and Epigraphy*, and the *American Journal of Physical Anthropology*. They will be published in final form in a synthetic monograph: possibilities for publishers include ASOR's Archaeological Research Series, UCLA's Cotsen Institute, and the Bahrain National Museum.

Funding

The DBP is making plans to secure external funding for these projects. This includes a collaborative research grant from the National Endowment for the Humanities and a professional development grant from the American Association of Physical Anthropology, as well as other granting agencies. The DBP is also applying for project affiliation with ASOR's Committee on Archaeological Policy, which will provide small levels of financial support.

Conclusion

The project would like to thank several individuals for their assistance conducting this research assessment: Jud King, Sandra Harris, Dr. Tim White, Leslie Freund, Joan Knudsen, Terry Strathman and UC Berkeley's Undergraduate Research Apprenticeship Program, Joan Knudsen, Victoria Bradshaw, and Paolo Pellegatti.