

## Annual Report: Molokai, Hawaii, USA 2018

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Hawaii is a classic example demonstrating how small founding propagules, landing at arguably the most isolated landfall in the world, developed into one of the few state-level societies in world prehistory. The timing, speed, and fluctuations of the development and transformation of the social, economic, and religious institutions that underpin the evolution of this complex society during less than one millennium are the broad research topics addressed by the current research of the IFR field school. Consequently, we targeted excavations to understand intra-household variability that can be linked to status and therefore class differences—a component of social stratification directly linked to the development of complex societies. For example, previous research has shown that tools fashioned from non-local stone, the presence of pig bone, and the nature of the household shrine are indicators of status. One large residential complex we partially mapped and excavated contained more than two dozen separate architectural structures each consisting of dry-laid boulders and cobbles that formed: platforms (presumably containing burials); a temple or *heiau* consisting of a square, high-walled enclosure with an internal paved altar; various C, U, and J-shaped structures which, functionally, were a cookhouse and other residential features for various domesticate purposes. Excavations were conducted into three of these structures in addition to the temple, totalling 3.5m<sup>2</sup>, to recover dating material, a sample of artefacts, and assemblages of food remains. Another site excavation was conducted at a high-status residential complex consisting of a separate religious structure, a house site, food preparation area, and stone tool manufacturing locale. Totalling about 7 m<sup>2</sup>, excavations revealed a faunal assemblage with differential distributions of stone tool manufacturing debris, high-status foods such as pig bone, and the delineation of separate areas for cooking, eating, and food refuse disposal. The total of 10.5m<sup>2</sup> excavated at both residential site complexes yielded approximately 2.5m<sup>3</sup> of cultural deposits, all dry-sieved through 6.4 mm (1/4") and 3.2 mm (1/8") screens, that were excavated in just under five weeks with a crew averaging about 10-12 people per day.

On lab days, all cultural material retained in the 6.4 mm sieves was washed. This included washing stone artefacts, stone debitage (the by-products of tool manufacture), marine shellfish, urchins, crabs, and bone (mostly fish with lesser amounts of pig and bird). Students learned how to identify shellfish to nearest taxon and quantification measures, while the stone debitage was assigned to size classes and tabulated per class by count and total weight. All other material, including the formed artefacts, were bagged for more detailed analysis at the University of Queensland using comprehensive reference collections to identify fish bones to nearest taxon, for example.

We also conducted a biological survey on the south-central shore of the island and adjacent to our study area. At low tide—the water was often only up to our ankles—we walked along the seaward side of a prehistoric fishpond which consists of a well-constructed stone wall arcing from the shoreline seaward for about a quarter mile. We collected shellfish and photographed habitats where certain species of shellfish live—taxa that are routinely found in the archaeological sites we were excavating. This provided us with a better understanding of where prehistoric foragers could have obtained shellfish along the otherwise soft shore which consisted of sand and mud.

Taken together, all these data, and subsequent lab analyses, will help us determine the precise dates of site use and provide some of the most detailed archaeological documentation of the internal organization and functions of religious structures in the Hawaiian Islands. The faunal remains will help elucidate the status of the occupants of the domestic structures, understand foraging and subsistence practices, and to determine human impacts to the near shore marine environments.

Finally, since only about a dozen standard radiocarbon dates were obtained from previous excavations in the study area during 1980-82, we submitted a new suite of samples using specialist-identified, short-lived wood charcoal and nut shell for radiocarbon dating from the IFR excavations as well as samples on loan from the Bishop Museum (where the 1980-82 excavated material is curated); all these samples will contribute to a new chronology for the settlement system.

The students helped primarily with the excavations, lab processing of finds some, and site mapping.

The results of this research will be submitted for publication in appropriate journals and possibly at conferences and university seminars. In these cases, the IFR will be noted as supporting aspects of the research.

The students were involved in the research by assisting with the excavations, lab work, biological survey, and participating in several seminar discussions.