Archaeology

and exchange helped to encourage the refinement of open-sea voyaging technology and skills, although these people also continued to depend to a large extent upon their horticultural base for subsistence. One curious development was a gradual decline in the quality and frequency of pottery manufacture, and the ceramic art eventually was abandoned by Polynesians early in the first millennium A.D. Consequently, pottery sherds are absent from Polynesian archaeological sites dating after this period, including those in Hawai'i.

The final phase in the exploration of the Polynesian islands probably began late in the first millennium B.C., with eastward voyages leading to the discovery of the southern Cook Islands, the Society Islands, and the Marquesas. Established settlements on these islands began soon thereafter, the date being a matter of current debate among archaeologists. It was from these central Polynesian archipelagoes that the final diaspora took place to the most remote islands on earth: Easter Island, New Zealand, and Hawai'i. Exactly when the Hawaiian group was first discovered remains a matter of debate, although most scholars would agree that this event occurred no later than about A.D. 600, and some would place the date several centuries earlier. The reason we cannot be more precise is that finding the first colonization site is akin to the old "needle in the haystack" problem. Likewise, determining the immediate source island for the first voyaging canoes is difficult to pinpoint, although one of the Marquesan islands is the most likely candidate.

Although it is unlikely that the *first* settlement site in the Hawaiian Islands will ever be located or excavated (indeed, it is probable that many early sites have been destroyed through years of intensive agricultural, residential, and commercial development in prime areas of the islands), archaeologists have succeeded in finding several sites dating to the early period of Polynesian settlement of the islands. One such early hamlet was situated at the mouth of the Hālawa Valley on Moloka'i Island (Site 17), while another early fishing settlement was located at South Point (Ka Lae), on Hawai'i Island (Site 47). These and other sites have yielded fishhooks, adzes, ornaments, and other artifacts with stylistic features linking them to sites of similar age in the Marquesas and Society Islands of central Polynesia. These early Hawaiian settlements also provided archaeological evidence that the Polynesian colonizers brought with them both the crop plants and domestic animals (dogs, pigs, and chickens) necessary to establish their horticultural economy in these new lands.

Even though the distances between Hawai'i and the islands of central Polynesia (such as Tahiti and the Marquesas) are formidable, it appears that the Polynesian seafarers made a number of return voyages between these archipelagoes. Certainly Hawaiian oral traditions speak extensively and eloquently of great navigator priests and chiefs, such as Pā'ao, or Moikeha and his son Kila, who guided their double-hulled canoes safely between "Kahiki" (Tahiti) and the Hawaiian Islands. Recent experimental voyages using the reconstructed Polynesian voyaging canoe *Hōkūle'a* have shown that such inter-archipelago sailing—while requiring considerable skill and knowledge is not as daunting as once thought by some armchair scholars.[1] Nonetheless, at some point in Hawaiian history such long-distance voyaging did cease, and became only a memory encoded in myth and tradition. Just when the voyages between Hawai'i and the central Polynesian homeland ceased is not certain, although it may have been around the thirteenth century A.D. From that time until A.D. 1778, when H.M.S. *Resolution* and *Discovery* under the command of Captain James Cook pierced the horizon beyond Kaua'i, Hawai'i became an isolated world unto itself.

The Development of Hawaiian Society

While sharing features of language and culture in common with other Polynesian groups, the Hawaiian society that greeted Cook's ships in A.D. 1778 was in many respects unique and distinctive. In part, this was a result of the archipelago's isolation from other Polynesian island societies, each of which had evolved along its own individual path of cultural change. Understanding how Hawaiian culture and society developed and changed over the many centuries following initial discovery and settlement is one of archaeology's primary goals. Describing the complex processes of cultural change is a difficult task, and the following is only a brief, skeletal outline of some of the main developments.[2] In order to describe cultural change over time, archaeologists and prehistorians frequently make use of what is called a culture-historical framework or *periodization* scheme. Although cultural

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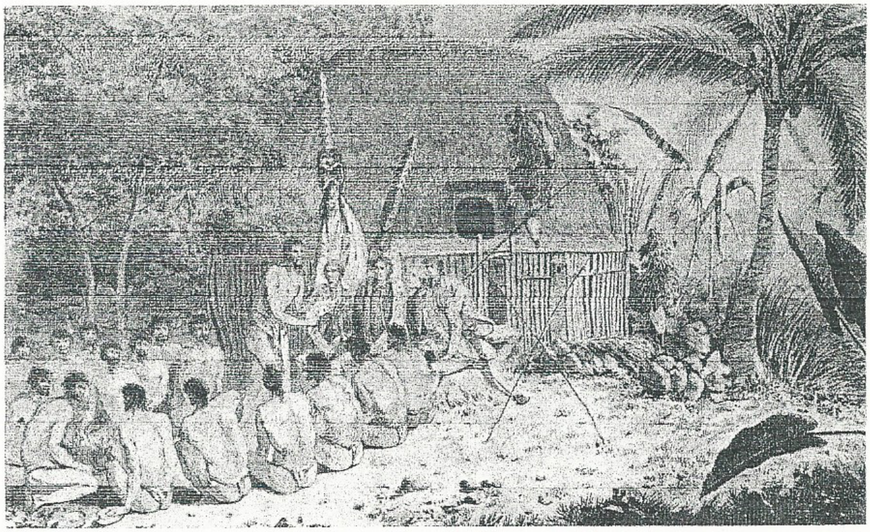
Legacy of Landscape
Patrick Vinton Kirch
UH Press: Honolulu
1996



Detail: "An Offeri
Captain Cook in
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change is in reality continuous, the entire sequence of Hawaiian prehistory is subdivided for convenience into a series of *periods*, just as European history is often subdivided into such temporal categories as the Middle Ages, the Renaissance, the Industrial Revolution, and so forth. For Hawai'i, the periods that have been defined and are used by most archaeologists are: the Colonization Period (A.D. 300–600); the Developmental Period (A.D. 600–1100); the Expansion Period (A.D. 1100–1650); and the Proto-Historic Period (A.D. 1650–1795).

The Colonization Period remains the least well documented or understood, because this phase of initial settlement and discovery is evidenced by only a handful of sites, such as those at South Point (Hawai'i) and at Waimānalo (O'ahu). Indeed, archaeologists actively debate the timing of initial Polynesian settlement of the islands, with estimates falling between about A.D. 300 or earlier and A.D. 750, although a few scholars would champion dates both earlier and later than this range. As mentioned above, the source of the first voyagers to the islands was certainly from one of the central Polynesian archipelagoes, most likely the Marquesas or the Society Islands.

Despite these ambiguities regarding the precise timing and immediate source of the Polynesian discoverers of Hawai'i, archaeologists have gleaned some understanding about this early time period. Given that Colonization Period sites are extremely rare, we can infer that the initial population was quite small, perhaps limited to a few canoe loads of people, numbering at most a hundred or so. These intrepid explorers came fully equipped and supplied to establish a permanent settlement in whatever lands they hoped to find, and carried with them the essential biological basis for their survival, namely crop plants and domestic animals. The introduction of crop plants was particularly important, because the Hawaiian Islands—despite their rich endemic flora—sorely lacked food plants useful to humans. In the tradition of their Lapita ancestors, the Polynesians carried with them root crops including taro (*Colocasia esculenta*) and yams (*Dioscorea alata*), bananas (*Musa* hybrids), sugarcane (*Saccharum officinarum*), and tree crops such as breadfruit (*Artocarpus altilis*) and coconut (*Cocos nucifera*). They also brought the sweet potato (*Ipomoea batatas*), a root crop of South American origin that had been introduced prehistorically into central Polynesia. (There is some possibility that the sweet potato did not arrive with the very first colonizers of Hawai'i, but was introduced later, during the Developmental or even early Expansion Periods, on one of the two-way voyages between Hawai'i and central Polynesia.) These and other cultigens, along with domestic pigs, dogs, and chickens, were to provide the basis for an intensive horticultural economy.

The early settlers were also skilled fishermen, a tradition they again inherited from their Lapita ancestors. The early Colonization Period sites have yielded a variety of fishhooks expertly manufactured from pearl shell and bone, and adapted to fishing in a range of inshore and deep-sea habitats. These fishhooks were made in distinctive styles quite similar to those found in early Marquesan archaeological sites, and provide critical evidence linking the first discoverers of Hawai'i with the Marquesas Islands of central Polynesia. Similarly, adzes of polished basalt stone found in these early contexts are also of forms related to early Polynesian adzes in the Marquesas and Society Islands.

The two known habitation sites of the Colonization Period are both small settlements, hamlets rather than villages in size, and were made up of clusters of pole-and-thatch houses, some of which were paved inside with fine river gravel (*'ili'ili*). Their inhabitants continued an ancient Polynesian tradition of burying their deceased in graves under the house floors. Until more sites of this remote time period are discovered and excavated, it will be difficult to say much regarding the social and political organization of the first Hawaiian settlers, although some things can be inferred from linguistic and comparative ethnographic evidence. This early society certainly was organized around hereditary chiefs, for the Hawaiian word for chief (*ali'i*) derives from the older Proto-Polynesian word *ariki*. However, this early society—made up of only a small population—probably would not have been as highly stratified, nor its *kapu*-system so pervasive, as in later times.

Of the Developmental Period of Hawaiian prehistory (roughly A.D. 600 to 1100) we know considerably more, thanks to the excavation of a number of habitation sites, including settlements at South Point (Site 47), in the Hālawa Valley (Site 17), and at a number of other locations throughout the Islands. The significance of this period lies in the development of *distinctively Hawaiian* cultural patterns. It was during the Developmental Period that the descendants of the first central Polynesian discoverers introduced those cultural traits and patterns that would eventually mark Hawaiian culture and society as different from other Polynesian groups.

While the population density of the archipelago during this time remained relatively low in relation to available land area, the numbers of people were increasing rapidly, as evidenced by the increased "visibility" of archaeological sites. Sites dating to the Developmental Period have been found on all of the major islands, although the preferred locations for settlements continued to be in the windward areas where there was an abundance of fresh water, fertile alluvial soils for farming, and good fishing grounds. However, toward the end of the Developmental Period sites begin to appear in the drier leeward areas, suggesting that the more desirable windward regions were already experiencing dense populations.

Developmental Period settlements continued to be small hamlet-type clusters of pole-and-thatch houses, often situated along the coast or near good fishing areas. In the Hālawa Valley on Moloka'i, one such hamlet (Site 17) was made up of round-ended houses with stone-lined hearths in the interior. This house form is similar to round-ended houses in the Society and Tuamotu Islands of central Polynesia, but this architectural style did not persist in later time periods in Hawai'i.

The development of distinctive Hawaiian cultural forms is most evident archaeologically in the record of material culture. Basalt adzes, which were the main woodworking tool of the Polynesians, were being made in new shapes and styles emphasizing a quadrangular cross-section, distinctively different from those of the Colonization Period. Likewise, the fishhook kit also displays new and distinctive Hawaiian forms. And several kinds of uniquely Hawaiian artifacts make their appearance in the Developmental Period, such as the stone bowling disc (*'ulu maika*) and the tongue-shaped neck ornament known as *lei niho palaoa* worn by chiefs and persons of rank.

The succeeding Expansion Period, from A.D. 1100 to 1650, was in many respects the most significant and critical phase for the emergence of classic Hawaiian culture and society as known from the time of Captain Cook's visit and after. Building upon the base of expanded population and distinctively new cultural patterns that had emerged over the course of the Colonization and Developmental Periods, Hawaiian society was now to undergo a highly dynamic phase of growth and intensification.

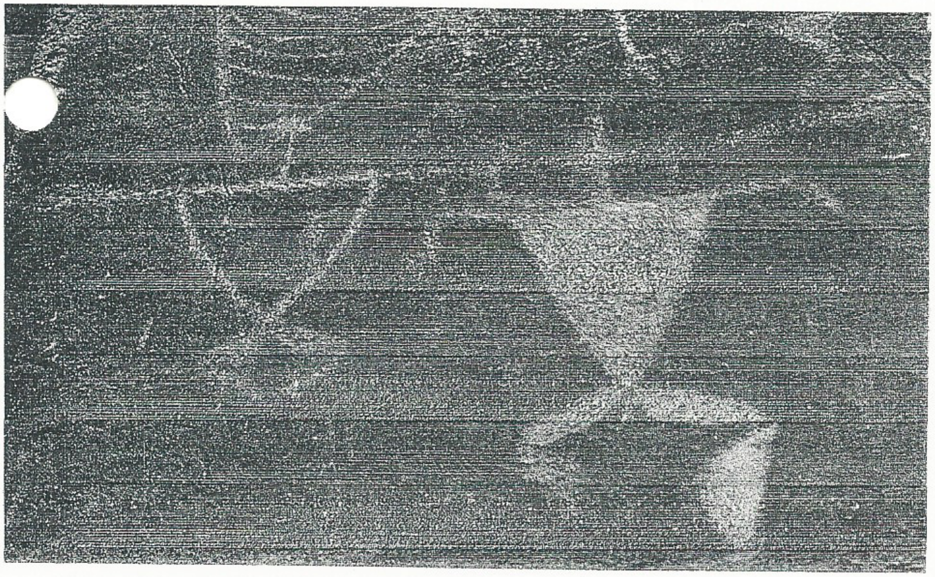
By the close of the Developmental Period, settlements had been established throughout the most desirable windward zones of the Islands, and some movement of people into the drier leeward regions had already begun. During the course of the 550-year-long Expansion Period, the archipelago-wide population would expand geometrically to several hundred thousand people. This population growth was certainly one of the most important underlying factors leading to social and cultural change. As the numbers of people multiplied, the need for additional agricultural land grew and the leeward slopes and valleys were cleared of native forest as agricultural field systems were established. By the close of the Expansion Period, vast tracts of intensively cultivated land had been opened up on the dryland slopes of Maui and Hawai'i Islands, and the traces of the garden walls are still visible today in Kohala (Site 29) and Kona (Site 43). In the already settled windward areas where stream water was abundant, the increased agricultural demand was met by developing sophisticated irrigation works for cultivating taro in flooded pondfields, in which yields are much higher than for dryland plantings. One of the finest examples of such beautifully constructed, stone-wall-faced irrigation complexes can be found in the Hālawa Valley on windward Moloka'i (Site 17). It was also during the Expansion Period that Hawaiian fishermen began to construct substantial stone-walled fishponds on the shallow reef flats, permitting them to raise prized mullet (*Mugil cephalis*) and milkfish (*Chanos chanos*) that thrived in brackish water. Examples of such fishponds—some of which are reputed in Hawaiian traditions to have been constructed by the legendary *menehune*—can also be seen on Kaua'i (Site 4), O'ahu (Site 8), and Moloka'i (Site 16).

Increased population also meant that the society as a whole was capable of greater differentiation and hierarchy. Ambitious chiefs with an eye toward aggrandizement of power and territorial acquisition could draw upon a plentiful populace for labor and warriors. The later part of the Expansion Period saw the crystallization of several characteristic aspects of Hawaiian sociopolitical organization, among them the *ahupua'a* system of land tenure and use. *Ahupua'a* consisted of pie-shaped land segments—often a river valley—that ran from the central mountains out to the sea, and thus encompassed all of the critical ecological zones of the island. Originally, in the traditional Polynesian pattern found in other island groups, these radial territories were probably held as extended family estates. During the Expansion Period, however, the Hawaiian chiefs began to assert their exclusive rights to control these lands, and a new pattern emerged in which subchiefs were assigned individual *ahupua'a* following the installation of a new paramount chief or island-wide ruler (*ali'i nui*), often following a war of succession. The commoners, or *maka'āinana*, were given rights to work their gardens and fields and build their houses on these *ahupua'a* lands in exchange for labor and tribute to the chiefs.

In consort with this new and increasingly hierarchical sociopolitical system went changes in religion and ritual practice. Hawaiian traditions relate that around the twelfth to thirteenth centuries, the practice of human sacrifice and the cult of the war god Kū were introduced to the islands by a navigator-priest from Kahiki, Pā'ao by name (see Site 50). Certainly during the Expansion Period the Hawaiian chiefs were increasingly making use of religious ideology to cement their power and position in society. Archaeological excavations at a number of stone temple foundations (see Sites 12, 21, 25, and 46) have demonstrated that major building episodes occurred during the Expansion Period, as the temple or *heiau* system began to be elaborated. By the close of the Expansion Period, *heiau* had become extensively developed and differentiated into a system of major "state" temples where the principal gods Kū and Lono were worshipped in elaborate and sumptuous ceremonies by the ruling chiefs and their priests. The *maka'āinana*, on the other hand, worshipped primarily in smaller agricultural temples (*heiau ho'oūlu'ai*), in fishing shrines (*ko'a*), and at family shrines within the men's eating house (*mua*).

The last stage of cultural change and development prior to the arrival of Europeans, and to the integration of the islands into the World System of colonial expansion and commerce, was the Proto-Historic, from about A.D. 1650 to 1795.[3] By this time, Hawaiian society had more or less emerged into its characteristic structures of organization, including the elaborate, hierarchical system of chiefs, priests, occupational specialists, and commoner farmers and fishermen. This society was validated and held together by the equally elaborated *kapu* system of prescriptions and prohibitions; the penalties for transgressors could be severe, including death. In these and other respects, Hawaiian society had become quite differentiated from those of other Polynesian societies with which it shared a common ancestry, dating back to the Lapita voyagers. With the development of highly sophisticated and intensive agricultural and aquacultural production, an elaborate political hierarchy and land tenure system, a religious ideology and ritual practice that included war and fertility cults performed on massive stone temple platforms, and a highly stratified social structure, the Proto-Historic Hawaiian culture can be closely compared with other emergent forms of "state-level" societies elsewhere in the world (for example, the Olmec culture of Mesoamerica, the Pre-Dynastic Period of Egypt, or the Mississippian culture of North America).

A great deal is known of Hawaiian life in the Proto-Historic Period, not only through the evidence of archaeology (which is abundant because there are more sites dating to this late time period), but from the oral traditions of the Hawaiian people themselves. The Hawaiian chiefs and priests had developed a great interest in preserving their own family and political histories. Experts in the recitation of chiefly genealogies, of the political histories of the great ruling families, of the tales of the great culture heroes of the past—of the collective *mo'o'ōlelo* or history of the islands—held positions of high status and respect in Hawaiian society. After the arrival in 1820 of Protestant missionaries, who created an orthography for the Hawaiian language, a number of these highly learned Hawaiians began to set their knowledge down on paper.



il: Several human *es and a “crab-claw”* motif on the sheer cliff at Olowalu. Modern iti have unfortunately ed the site. *(See p. 64.)*

From the writings of such men as Samuel Kamakau, John Papa ʻĪʻi, and David Malo, among others, we can relate many of the archaeological sites of the Proto-Historic Period to the events and actions of the great men and women of ancient Hawaiʻi.

Archaeology in Hawaiʻi

Despite their numerous and sophisticated developments in agriculture, the material and dramatic arts, social organization and politics—all of which rank with many of the “archaic states” or early civilizations of the Old and New Worlds—the ancient Hawaiians had not invented a writing system prior to European contact. This does not mean that the Hawaiians were unconcerned with recording their history, for their accumulated knowledge was passed on to succeeding generations through oral traditions. Fortunately, much of this ancient oral literature has come down to us today through the works of the nineteenth-century bards who set their knowledge down with pen and ink. Thus, Hawaiian traditions continue to provide an important source of information on the everyday life as well as the social and political history of Hawaiʻi in the centuries before Captain Cook broke the Islands’ isolation from the Western world.

The other great source of information and potential knowledge about Hawaiian *pre*history (that is, before written documentation) must come from the material traces left in the soil and on the landscape of the islands by generations of human occupants. This material record ranges from such highly visible sites as the monumental stone temple platforms—*heiau*—that still dominate the landscape, to more subtle features, such as the low parallel ridges of ancient dryland garden fields that take a trained eye to detect. These sites, as well as the accumulations of ancient artifacts, bones, plant remains, and other detritus of human life found buried within sites, provide a richly textured and finely patterned record of Hawaiian life over hundreds of years. The discovery, study, and interpretation of such ancient sites and artifacts is the province of archaeology.

Although questions and issues of Hawaiian prehistory began to be explored soon after European contact, archaeological research per se did not begin to develop in the Islands until the close of the nineteenth century. A critical event was the founding in 1889 of the Bernice P. Bishop Museum in Honolulu. The museum’s first director, William T. Brigham, began to assemble a collection of ancient stone tools and implements, publishing in 1902 an important monograph on these artifacts under the title *Stone Implements and Stone Work of the Ancient Hawaiians*. Brigham was also fascinated by the ancient religion of the Hawaiians, and he reasoned that a detailed, scientific survey of the stone temple platforms and enclosures throughout the islands could reveal much concerning Hawaiian prehistory. Brigham hired John F. G. Stokes as the Bishop Museum’s curator of ethnology, and directed Stokes to survey and make accurate plans of *heiau* on Molokaʻi and Hawaiʻi Islands. Although Stokes’ Hawaiʻi Island work was not published until 1991, long after his death, he nonetheless laid the groundwork for modern archaeological research in the Islands. In addition to his *heiau* surveys, Stokes conducted the first systematic subsurface excavation in the Islands, of a fishermen’s shelter cave and associated shrine on the island of Kahoʻolawe, in 1913.

During the decades between the two world wars, much basic field survey work in Hawaiian archaeology was carried out under the auspices of the Bishop Museum. Scholars including Wendell Bennett (who later became famous for his excavations in South America), J. Gilbert McAllister, Winslow Walker, and Kenneth P. Emory diligently recorded hundreds of archaeological