– ARTICLE –

On the Margins of the Market: Change and continuity in nineteenth-century Hawaiian household economies on the Nā Pali Coast, Kaua'i Island

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ABSTRACT

While hinterlands have often been viewed as the areas that surround urban centers or central zones, some researchers have used the term to describe areas on the edges or margins of an integrated periphery. In Hawai'i, the market economy spread across large swaths of the archipelago during the nineteenth century. This paper considers the spread of the market economy through Hawai'i from the perspective of a community in one of Hawai'i's marginal regions. Here, I examine artefacts and subsistence evidence from nineteenth-century Hawaiian house sites at Miloli'i, a community on the remote Nā Pali Coast of Kaua'i Island. Analysis of the household assemblages suggests that the residents of the Nā Pali Coast gradually began to incorporate foreign consumer goods into household economies. Rather than serving as hallmarks for large-scale changes in the household economy, foreign goods were instead incorporated into households that continued to rely on household-level food production and manufacture household goods from locally available materials. Rather than committing themselves to wholesale participation in the market economy, this paper argues that Nā Pali Coast households were able to strategically fashion for themselves a place on the margins of the market economy.

Keywords: Post-contact, Hawai'i, Historical archaeology, Household archaeology, Market economy, Hinterlands

INTRODUCTION

One of the first extensive studies of post-contact Hawaiian house sites focused on Anahulu Valley, O'ahu (Kirch 1992). This seminal study examined the arrival of the market economy in the archipelago's rural areas from the perspective of household archaeology. Kirch's (1992) investigation traced a swift increase in the number of foreign artefacts at Hawaiian house sites after the 1830s, showing how foreign goods moved quickly into the countryside as the market economy expanded through the archipelago. Subsequent researchers have added to the picture of how rural Hawaiians' connections to the expanding market economy varied at different times and in distinctive circumstances. Some studies have addressed changes in rural Hawaiian households (e.g., Anderson 2001; Goodwin 1994). Others have focused on specific cultural and historical settings, such as the Kalaupapa Hansen's Disease Colony (Flexner 2010a, 2012, 2014) or homesteads associated with the Big Island *paniolo* or Hawaiian cowboys (Mills *et al.* 2013; Barna 2013). As a result, we have a growing understanding of the complex relationships that emerged between Hawai'i's core areas, including the seaport towns, and hinterlands in the nineteenth century.

Here, I present the results of excavations at five nineteenth-century house sites at Miloli'i, an *ahupua'a* or local political unit on the remote Nā Pali Coast of Kaua'i Island. Investigations at these house sites produced household assemblages with both foreign consumer goods and artefacts of indigenous materials, as well as abundant faunal remains and marine shell. These assemblages offer insight into how the experience of Hawai'i's growing market economy differed for households in the archipelago's hinterlands, and how residents exploited their remote surroundings to remain on the margins of systematic changes.

THE MARKET ECONOMY IN NINETEENTH-CENTURY HAWAI'I

One coincidence regarding Cook's arrival in Hawai'i in the last quarter of the eighteenth century is that it occurred during the Industrial Revolution. Unlike previous colonial forays in the Pacific, such as the efforts of the Spanish in the Philippines and Micronesia, the contacts between the British and Hawaiians were conducted within a historical *milieu* associated with rapidly increasing industrialization and the search for new sources of raw materials and markets (see Bayman 2017). Thus, when newcomers – fur traders, sandalwood traders, missionaries, and whalers –

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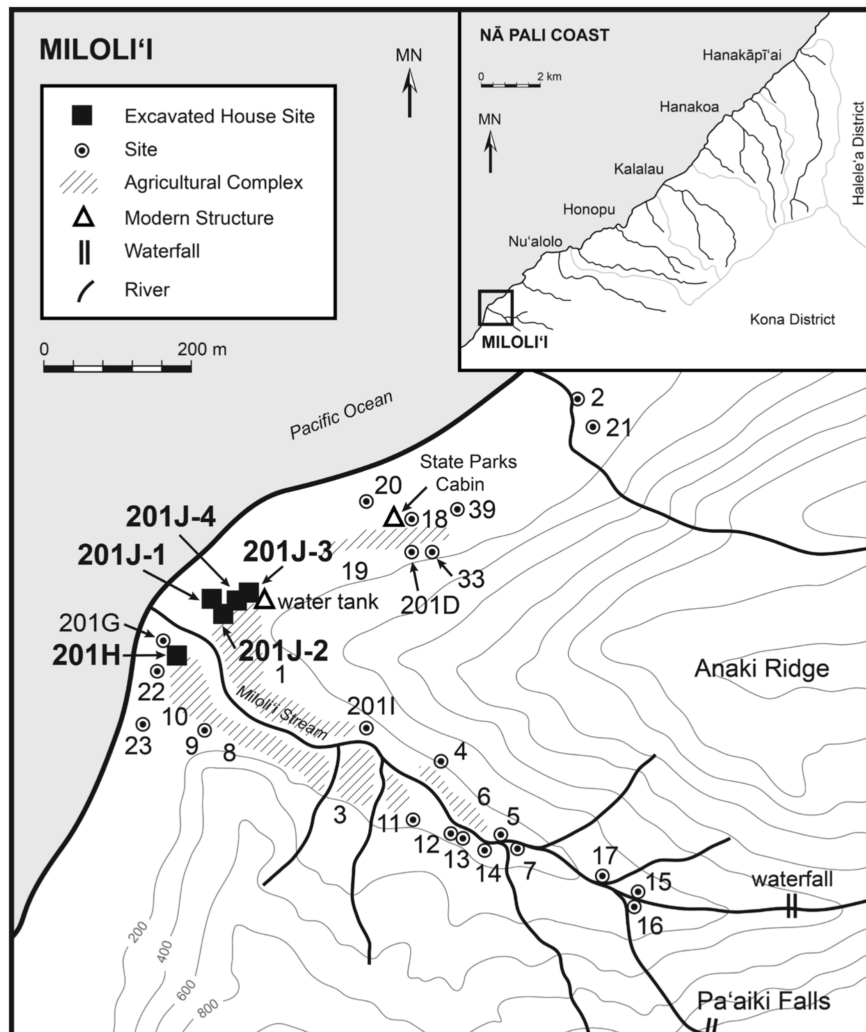

Figure 1. Detail of the area near the mouth of Miloli'i Stream, where five house sites were excavated in 2016 and 2017. Illustration by Diana Izdebski.

began to arrive in the archipelago, the goods and ideas they brought were not just new or 'foreign' to Hawai'i. Instead, they were part of an emerging status quo surrounding the growth of industry in the Anglophone world and the expansion of consumer society.

While the concept of the market economy is so broad and nuanced that it is difficult to describe concisely, it is possible to outline a few significant themes. One definition of the market revolution frames it as the emergence of an 'economy in which farmers and manufacturers produced food and goods for the cash rewards of an often distant marketplace,' in place of 'a largely subsistence economy of small farms and tiny workshops, satisfying mostly local needs through barter and exchange' (Stokes 1996:1). This definition succinctly highlights several central axes of difference that may distinguish market-based and non-market-based economies. First, the context of production may shift outside the realm of the household or local village. Second, the distance traveled by goods and raw materials increases exponentially. Finally, trade moves outside established and customary social networks, undertaken by increasingly anonymous partners and unencumbered by societal restraints on consumption.

According to Sahlins (1992), the Hawaiian *ali'i*, or members of the chiefly class, initially incorporated access to the market economy into the political economy of the archipelago. Port towns such as Honolulu served at the outset as central points for exchange, where Hawaiian rulers traded with foreign sailors to obtain goods that served as both symbols of status and military support. The sandalwood trade engendered a rapid escalation of international trade during the 1810s, and a subsequent influx of whalers prolonged trade opportunities after the sandalwood supply ran out. American businessmen, many descendants of the missionaries who arrived in the early nineteenth century, counseled the Hawaiian monarchs to allow fee-simple ownership of Hawai'i's lands by foreigners to expand the sugar industry. This goal was ultimately accomplished

through the Māhele, a process of land privatization that culminated with the passage of the Alien Land Ownership Act in 1850 (Chinen 1958).

While access to the market economy was initially restricted to Hawai'i's elite, by the mid-nineteenth century, its influence was widespread. Manufactured goods imported from foreign places permeated local exchange networks, and wage labor had largely supplanted household-level production (Ralston 1984). The rural population quickly declined, based on both the catastrophic effects of epidemic disease and the movement of farming families to urban areas. Increasing requirements for cash, required to pay for various taxes instituted by the chiefs and the monarchy, spurred many households and families to move off their ancestral lands in search of wage labor in urban areas (Linnekin 1990: 196–197). Despite these accounts of widespread change, however, there are ample reports to suggest that many Hawaiians' ways of life exceeded the strict bounds of the market economy (e.g., Emory 1949; Linnekin 1985; McGregor 1995; Lebo *et al.* 1999).

This paper engages with the question of cultural continuity in nineteenth-century Hawaiian households from the perspective of a community in one of the archipelago's remote hinterlands. While the results of the spread of the market economy and capitalism through Hawai'i are indisputable (e.g., Lili'uokalani 1898), the discussion that follows considers the significance of living in a remote, marginal environment on the nature of households' engagement with the market economy. The spread of capitalism and the market economy across the globe has not been uniform (Wolf 1982; see also Wurst and McGuire 1999). For nineteenth-century Hawaiian households, the transition from household-level production to a wholesale reliance on the market economy was not an all-or-nothing proposition. Based on unique configurations of locally specific constraints and opportunities, farming and fishing families could structure household economies to combine participation in the consumer market with the maintenance of non-market-based economic practices.

FROM THE CENTER TO THE MARGINS

This paper considers the expansion of the market economy in Hawai'i from the perspective of a community in one of the archipelago's remote hinterlands. Archaeologists now routinely emphasize the importance of peripheries in core-periphery relationships (Bayman 2007; Van Dyke 2007; Stein 2002). Many have highlighted the complex nature of peripheries, outlining the differences that may exist within and between such regions in terms of integration with the core (Alexander 2015; Hall 2000; McGuire 1991; Sweitz 2012). Scholars have long noted that networks of power tend to become weaker with distance from the center (e.g., Mann 1986). Increased distances may reduce the ability of centralized institutions, whether economic, political, or ideological, to regulate personal and group behavior (Lightfoot and Martinez 1995; Rodseth and Parker 2005). While living in such a region may have certain disadvantages, such as diminished access to trade opportunities or limited access to fertile agricultural land, researchers have increasingly focused on the potential benefits that regions on the 'margins' may provide to their residents (Kardulias 2007; Bloxam 2006; Turner and Young 2007).

The notion of the marginal periphery or 'hinterland' has important implications for studies that focus on cultural persistence or continuity in indigenous communities. Researchers consider such outlying areas as often maintaining more autonomy from outside influence (Gills and Frank 1991). Some scholars have identified marginal regions as places of 'refuge,' where traditional practices could be maintained (Sherratt 1993; see also Schneider 2015). Outlying areas are now often seen as potentially dynamic areas of innovation and creative adaptation in response to large-scale trends (Bernard *et al.* 2014; Cutright 2010; Naum 2010; Mullin 2011; Lightfoot and Martinez 1995; Stein 2002).

In studying the non-market to market transition in Hawai'i, we can consider this shift as an active process based on individual choices made by people in specific local circumstances. In place of models that portray change as flowing directly out of the core into the periphery, we can look toward the edges of the periphery to consider how people on the margins of a systematic change reacted to such central influences in innovative ways. While such marginal spaces may limit specific options, they can also provide unique advantages.

BACKGROUND TO MILOLI'I, NĀ PALI COAST, KAUA'I ISLAND

Miloli'i, a community on the remote Nā Pali Coast of Kaua'i Island, offers an ideal setting to investigate the diversity of Hawaiians' interactions with the market economy during the post-contact period. The region is bounded by sea cliffs that block most overland access, and storms restrict sea travel during the winter months. Miloli'i is immediately west of Nu'alolo, a community renowned both for its hanging ladder (Pukui 1983: 214) and a massive archaeological excavation undertaken by Bishop Museum in the 1950s and 1960s (see Field 2015; Graves *et al.* 2005). Situated on the western or leeward end of the Nā Pali Coast, the valleys of Miloli'i and Nu'alolo are steep and rocky and support a primarily dryland vegetation regime. In land records dating to the nineteenth century, Miloli'i and Nu'alolo were considered part of Kaua'i's Kona district, which also included Waimea and other areas on Kaua'i's leeward coast.

Only two Land Commission Awards (LCAs) were granted in Miloli'i during the Māhele land division of 1848–1856. These awards included *'āina kalo* 'taro lands' and *pā hale* 'house lots' in four *'ili* (subdivision of an *ahupua'a*) whose locations are no longer known. Despite the relatively

small number of LCAs, Miloliʻi appears to have supported a community of several dozen people during the nineteenth century. Censuses from 1831 and 1835 numbered 55 and 42 residents, respectively (Ke Kumu Hawaii 23 December 1835: 204). During a trip along the Nā Pali Coast in 1895, Eric Knudsen (1947: 3) saw empty houses 'scattered all over the shore and up the sides of the small hills.' Stacey (1953:4) later described seeing the remains of some 'fifty households' at the base of Anaki Peak. Tomonari-Tuggle (1989) and Yent (1989) recorded agricultural terraces, retaining walls, and cave shelters throughout the coastal flat and valley.

While historical sources from the early nineteenth century about life in Miloliʻi are few, a brief account by a man who lived in Miloliʻi in the 1870s offers some information about life in those times. According to Kaumeheiwa (qtd. in Lydgate 1917: 3):

> Milolii was quite a different place in those days. There were taro patches all up here on the side hill and on all the palis there was sugar cane growing. – the choices varieties that we don't see these days – ulaula, opukea, and lahi: and bananas; – maia, hau and loaha…

Kaumeheiwa reported that the people lived primarily on fish, mentioning the *moi* (*Polydactylus sexfilis*) specifically. The Nā Pali Coast with its well-developed reefs and low population has long been known for as an excellent fishing location, and the high quality of the fishing may have contributed to the area's continued occupation into the late nineteenth century. However, as he explained, 'whenever the moi came not to Milolii, a big supply of poi and dried fish and bananas and sugar cane sufficed' (qtd. in Lydgate 1917: 3).

According to Kaumeheiwa, the population of Miloliʻi began to decline after a flood damaged the irrigation system in the 1870s. While the destruction of the irrigation system was likely a contributing factor, the challenges required to access this remote location undoubtedly played a significant role. Knudsen, who owned much of western Kauaʻi at this time, mentioned only a single household occupying the area near the mouth of Miloliʻi Stream around 1901. His tenant reported that, despite his attempts to repair the irrigation ditch, the taro 'didn't grow right,' and the family moved away shortly after that (Knudsen 1947: 4).

By 1900, the vacant houses standing along the coast had captured the attention of Bishop Museum Director William Brigham, who was seeking a grass-thatched house for a museum exhibit (Summers 1988). He arranged for one structure to be transported to Honolulu, where it remains on display as part of the *Hale Pili* exhibit in Hawaiian Hall. The archaeology fieldwork described below includes excavations conducted at the location where this house stood (Kahn 2014, 2016; Kahn *et al*. 2016), as well as several grass-thatched structures built and occupied during the mid- to the late nineteenth century.

Living in one of Hawaiʻi's remotest areas offered the people of Miloliʻi specific opportunities to continue to pursue traditional ways of life. Because the western Nā Pali Coast was considered unsuitable for residential or industrial development, they did not encounter pressure to leave but were instead able to occupy the region as *de facto* tenants of the Knudsen family (Knudsen and Noble 1944: 39). Households on the Nā Pali Coast maintained taro agriculture into the late nineteenth century, as shown by historical accounts and Mahele records; moreover, they had access to abundant wild foods and productive fishing grounds able to support a small local population. Consequently, while the marginality of the location may have limited the availability of consumer goods, it also offered the prospect of pursuing a lifestyle grounded in the traditional patterns of the Hawaiian household.

NINETEENTH-CENTURY HOUSE SITES AT MILOLIʻI

Site 201H (The '*Hale Pili*')

Site 201H is located atop a sea cliff on the western bank of Miloliʻi Stream. The residential complex includes a stone-lined house platform and two rectangular terraces. The structure collected by the Bishop Museum, shown in Figure 2 at the upper right, stood on the house platform (Kahn *et al*. 2016: 10). The terrace adjacent to the platform is a *lānai* paved with *ʻili ʻili* (pebbles), and the second terrace is an earthen terrace buttressed by large boulders. Test units previously excavated by Kahn on the house platform, *lānai*, and lower terrace in 2009 produced domestic refuse and a small number of historical artefacts (Kahn 2014; Kahn *et al*. 2016). Six additional test units were excavated on the lower terrace in 2017. The terrace contained several discrete cultural layers with domestic midden and historical artefacts ranging in age from the early post-contact period to the late nineteenth century. A dense midden deposit with a *terminus post quem* (TPQ) date of 1840 was encountered above the early post-contact layer; this deposit is thought likely to be associated with occupation in the 1850s-1860s. Removal of the house structure to Bishop Museum in 1900 provides a secure *terminus ante quem* (TAQ) date for the uppermost deposit, which is estimated to date to the 1880s–1890s.

Artefacts recovered in 2009 and 2017 included a range of foreign and traditional materials (Supplemental Table 1). Selected temporally diagnostic artefacts are summarized in Supplemental Table 2. Foreign objects began to appear in considerable numbers in the mid-nineteenth-century deposits, which yielded small quantities of whiteware ceramics, iron nails, and bottle glass, and increased in the late nineteenth-century contexts. Other types of foreign artefacts included buttons, beads, and fragments of rubber combs, writing slates, and an agateware doorknob. Indigenous artefacts included flakes and tools of basalt and volcanic glass, fishing equipment of hematite, shell, and

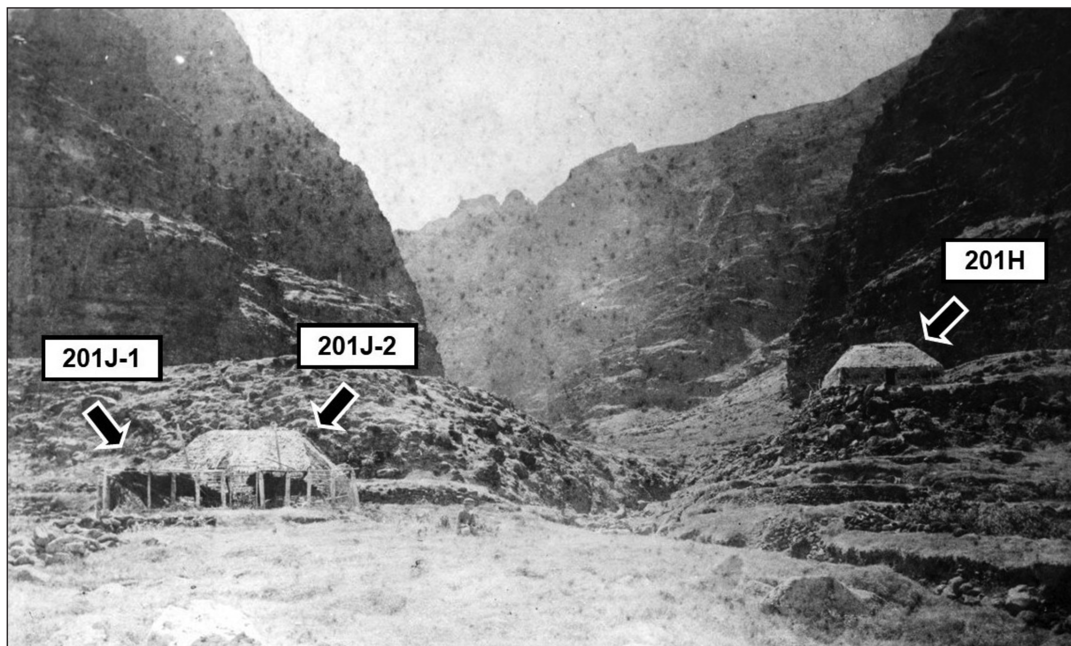

Figure 2. Mouth of Miloliʻi Valley, *ca*. 1900. Photo by W. H. Deverill, reproduced courtesy of the Bishop Museum Archives.

bone. Food remains included various fish taxa, *Sus scrofa* (pig), Caprinae (sheep-goat), *Canis familiaris* (dog), *Gallus gallus* (chicken), Cheloniidae (sea turtle), *Nerita picea* (*pipipi*), and *Cellana* sp. (*ʻopihi*).

Feature 201J-1

Across Miloliʻi Stream, Feature 201J-1 is one of two house platforms built adjacent to the western streambank. The platform is built of stacked basalt cobbles and stands 40 cm high. A standing superstructure, absent its thatching, can be seen on the platform *ca*. 1900 in Figure 2. The surface of the platform is partitioned into a main dwelling area, where the house would have stood, and a rectangular *lānai*. Immediately downslope of the platform is an area of dense surface midden. In 2016, six units were excavated on and around the house platform. Diagnostic artefacts such as Prosser buttons and hard rubber comb[1] fragments in the lower midden deposits offer a TPQ for this context in the 1840s. The assemblage is likely to date to the latter half of the nineteenth century. The house is here estimated to have been occupied through approximately the 1870s-1880s. Surface artefacts and the uppermost layer of midden comprised a mixed assemblage from the late nineteenth to the first half of the twentieth century. These artefacts suggest that the platform was used as a temporary dwelling or campsite after its initial abandonment.

The most common artefacts from Feature 201J-1 included iron fragments, nails, and olive-green bottle glass (Supplemental Table 3). One complete clear glass pharmaceutical bottle collected from the late nineteenth-century midden was made in a two-piece mold, a manufacturing method common between *ca*. 1750 and *ca*. 1880 (Jones *et al*. 1989: 27). Other types of foreign artefacts included buttons, one sherd of hand-painted whiteware, iron nails, a clay marble, and writing slate fragments. Also found on the house platform were two basalt flakes and two volcanic glass manuports. Food remains included fish, pig, dog, sheep-goat, sea turtle, *pipipi*, and *ʻopihi*.

Feature 201J-2

Immediately upslope from Feature 201J-1 is Feature 201J-2. The platform also, built from stacked basalt cobbles, is 95 cm tall at its highest point. A collapsed superstructure with intact thatching is visible behind Feature 201J-1 in Figure 2. This platform is also divided between a main dwelling area or house site and a *lānai*. The main dwelling area contains a stone-lined hearth. Six units were excavated on and around the platform in 2016. Midden deposits around this platform were significantly reduced in comparison to those associated with Feature 201J-1. Diagnostic artefacts associated with this feature offer a TPQ of *ca*. the 1880s; the house is estimated here to have been occupied through the 1880s–1890s.

Artefacts included iron fragments, bottle glass, iron nails, yellowware ceramics, painted and plain whiteware ceramics, writing slate fragments, a percussion cap, a glass lamp chimney, a door escutcheon plate, an agateware door-

1 Prosser buttons were introduced in 1840 but became widespread in the 1840s (Sprague 2002). The vulcanized rubber used to manufacture hard rubber combs was first produced in 1844 (Skrabec 2014: 3).

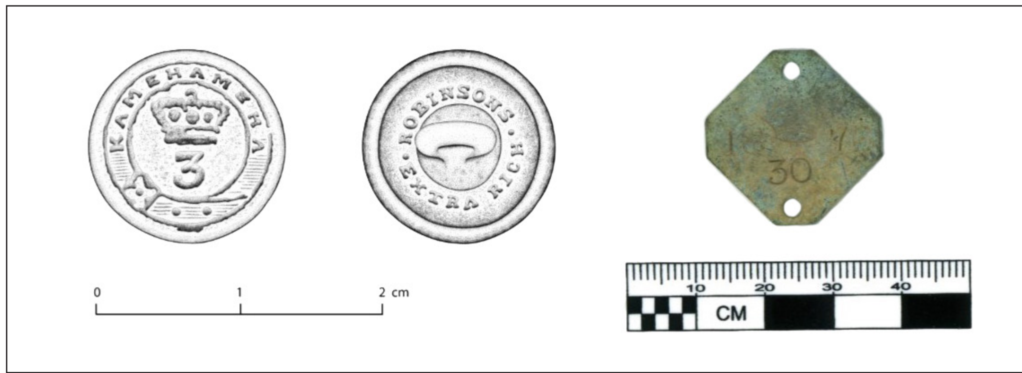

Figure 3. Brass button from Feature 201J-3 (left) and copper dog tag from Feature 201J-2 (right). The tag is stamped with the numbers '1876' and '30', along with the image of a crown. Illustration by Diana Izdebski.

knob fragment, and a barrel hoop (Supplemental Table 2). One notable find was a small copper tag engraved with a crown and the numbers '30' and '1876' (Figure 3). This artefact is a dog tag issued by the Hawaiian Kingdom as part of the animal taxation program initiated in the 1840s (Hawaiian Humane Society 1997). Food remains included fish, pig, sheep-goat, sea turtle, *pipipi*, and *'opihi*.

Feature 201J-3

Feature 201J-3 is one of two partial house floors located on a terrace of stacked basalt cobbles and boulders. The floor consists of an *'ili 'ili* paving surrounding a slab-lined hearth. Three test units were excavated near the hearth. Artefacts included a utilized basalt flake, a glass bead, an iron fragment, a yellowware fragment, a leather fragment, and a piece of flat glass (Supplemental Table 2). Of note was a brass button embossed 'Kamehameha/3' on the front and 'Robinson's/Extra Rich' on the back. Buttons similar to this were reportedly used by the retainers of Kamehameha III in the 1830s (Reynolds 1835: 406). Based on the date of the button and the absence of a large platform, Feature 201J-3 is thought to date to the mid-nineteenth century. Food remains included fish and *pipipi*.

Feature 201J-4

Feature 201J-4 lies immediately to the east of Feature 201J-3. Like Feature 201J-3, it consists of a remnant paving of *'ili 'ili* surrounding a hearth. The hearth in this feature is stone-lined. Artefacts collected from the house floor included utilized basalt flakes, a utilized basalt piece, an iron nail, a few metal fragments, and shards of olive-green bottle glass. Like Feature 201J-3, Feature 201J-4 is considered likely to have been occupied during the mid-nineteenth century. Food remains included fish and *pipipi*.

SUMMARY

The nineteenth-century house sites excavated at Miloli'i thus yielded artefacts and midden materials from contexts dating to different parts of the post-contact period. Table 1 summarizes the estimated dates assigned to the house sites. Only one context, Layer D at the *Hale Pili*, dates to the early post-contact period. Contexts dating to the mid-nineteenth century included the two *'ili 'ili* house floors, Features 201J-3 and 201J-4, along with Layer C at the *Hale Pili*. Late nineteenth-century contexts included the two stacked-rock house platforms, Features 201J-1 and 201J-2, and Layer A/B at the *Hale Pili*.

OVERVIEW OF RESULTS

Examining the household artefacts from Miloli'i allows us to look at an area that is not just rural but a region at the margins of the periphery. This paper examines the components of household economies at Miloli'i using two lines of evidence, which include household artefacts and subsistence remains such as faunal material and marine shell. By considering these two essential aspects of the household economy together, we can gain a more holistic picture of the ways that residents of the Nā Pali Coast positioned themselves in relation to Hawai'i's expanding market economy during the mid- to the late nineteenth century.

Table 1. *Estimated dates for 19th-century house sites at Miloli'i*

Component	Context	Date
Early Post-Contact	Site 201H, Layer D	*ca.* 1778–1840s
Mid-19th Century	Feature 201J-3	*ca.* 1830s–1850s
	Feature 201J-4	*ca.* 1830s–1850s
	Site 201H, Layer C	*ca.* 1850s–1870s
Late 19th Century	Feature 201J-2	*ca.* 1870s–1880s
	Site 201H, Layer A/B	*ca.* 1880s–1890s
	Feature 201J-1	*ca.* 1880s–1890s

Household Goods through Time

One method that archaeologists have used to study the expansion of the market economy in Hawai'i has been the investigation of portable artefacts at Hawaiian house sites. Previous investigations have shown that foreign goods first appeared in elite contexts in central locations, including seaport towns such as Honolulu and Lāhainā (Carter 1990; Fredericksen and Fredericksen 1965; Garland 1996; Klieger 1998; Lebo 1997). Researchers have also addressed the integration of foreign materials into households in rural areas. Kirch's (1992) study of post-contact house sites at Anahulu Valley, O'ahu, outlined a dramatic increase in foreign artefacts at house sites of different ages and a corresponding decrease in objects produced from local materials. His analysis demonstrated that while the earliest post-contact house sites contained only a few foreign artefacts, by the 1810s, these items were becoming increasingly common. Consumer goods began to dominate household assemblages, accounting for virtually all artefacts recovered from the house sites (Kirch 1992: 178). Subsequent studies have confirmed that house sites occupied after the mid-nineteenth century often contained diverse assemblages of foreign consumer goods (Goodwin 1994; Anderson 2001; Mills *et al.* 2013; Flexner 2014; Flexner *et al.* 2018).

The assemblage of foreign artefacts recovered from the Miloli'i house sites shows broad similarities to others from roughly contemporaneous residential contexts. The basic set of foreign objects, ranging from iron nails to bottle glass, was generally comparable to other mid- to late-nineteenth-century Hawaiian house sites in rural areas. There are some ways, however, in which the Miloli'i assemblage is distinctive. For example, while foreign artefacts outnumbered so-called 'traditional' items in the mid-nineteenth-century contexts, the difference was not pronounced. The mid-nineteenth-century foreign artefacts accounted for 60.4 percent of the total artefacts (Table 2). Thus, objects of traditional materials such as basalt, bone, and shell, accounted for 39.6 percent of the assemblage. Foreign artefacts only began to dominate household assemblages in contexts associated with the late nineteenth-century component. Even in these contexts, the use of goods manufactured from traditional materials continued.

It is also important to consider the types of foreign goods that were recovered from these household assemblages. Consideration of changes in the nature of the objects represented shows that some objects, such as buttons, nails and metal hardware, slate fragments, ceramics, and glass bottle fragments, increased significantly from the mid- to late nineteenth century. In contrast, others, such as flint, decreased in frequency. The decrease in flint artefacts may be due to the increasing availability by this period of matches for starting household fires. Glass beads, typically associated with the early marine trade, were becoming less commonplace by the late nineteenth century.

Table 2. *Frequency of foreign artefacts through time.*

Component	Estimated Dates	Foreign Artefacts	Total Artefacts
Early Post-Contact	*c.* 1778–1830	4 (6.1%)	66
Mid-19th Century	*c.* 1830–1870	165 (60.4%)	273
Late 19th Century	*c.* 1870+	700 (95.1%)	734
Total		**869 (100.0%)**	**1,073**

Several artefact types increased from the mid- to the late nineteenth century. The increased frequency of buttons in late nineteenth-century contexts is likely associated with the wearing of Western-style clothing. Iron nails may have been used in the construction or repair of elements of grass-thatched house frames. The presence of door hardware is strong evidence that the house at Feature 201J-2 had a wood-framed door. A probable door frame is visible on the house at Feature 201J-1 in Figure 2, underscoring the likelihood that this structure also had a wooden door. The writing slate fragments at the late nineteenth-century house sites may be associated with the schoolhouse at Miloli'i during the 1870s or 1880s. The ceramic artefacts were primarily unidentifiable fragments, although a few bowls were identified. Ceramic bowls, especially large containers, may have been incorporated into communal serving regimes (see Kirch 1992: 182). While ceramic artefacts were rare in the mid-nineteenth-century contexts, at the late nineteenth-century house sites, they were much more common.

The bottle glass, the majority of which was olive-green glass consistent with mold-blown wine or beer bottles, suggests that residents may have obtained spirits for household consumption. The presence of several olive-green glass flakes and fragments with apparent use wear, however, indicates that glass bottles may have been recycled with regularity as sources of raw material for expedient tools.

One noticeable trend is the near absence of bottled commercial goods. At the Anahulu house sites, numerous complete bottles and bottle fragments were recovered. Kaneiaulu's House (D6-26), for example, yielded a bottle with the mark of the French parfumier Lubin (Kirch 1992: 82). A similar bottle was recovered from Keanakolu Stone Cabin on Hawai'i Island (Mills *et al.* 2013: 124). Site 1801 on Kalaupapa Peninsula, Moloka'i Island, thought to have been occupied between 1845 and 1866, produced a diverse assortment of such items. The assemblage included bottles of Macassar's Hair Oil, a range of pharmaceutical products, and condiments such as pepper sauce and Worcestershire sauce (Goodwin 1994).

At Miloli'i's two late-nineteenth-century house sites, while one complete medicine bottle was recovered, there was a conspicuous lack of similar products. The range of glass bottles, for example, was limited primarily to olive-green bottle glass. Other artefact categories also expressed limited diversity. For instance, while minimal quantities of painted ceramics were present, most ceramic fragments

Table 3. *Summary of selected foreign artefacts.*

Category	Early Post-Contact	Mid-19th Century	Late 19th Century
Bead, glass		2	
Buttons (bone, shell, porcelain, brass)		5	11
Nail, iron		27	46
Iron fragment	3	40	418
Ceramic (whiteware, yellowware, Chinese porcelain)		15	59
Flint	1	10	4
Slate		4	10
Bottle glass (olive-green, amber, aqua, clear)		22	93
Other foreign artefacts		40	59
Total	**4**	**165**	**700**

were undecorated. The single sherds of hand-painted and sponge-painted ceramics were floral designs, although neither appeared to represent the famed Lokelani pattern (e.g., Kirch 1992: 109). Similarly, few formal iron tools were collected, with metal artefacts largely restricted to machine-cut iron nails, miscellaneous pieces of metal hardware, and unidentifiable iron fragments.

The incorporation of these foreign objects into the household occurred alongside the continued use of certain items likely obtained outside of market-based contexts. This assemblage of artefacts, summarized in Table 4, included items manufactured from basalt, volcanic glass, shell, and bone. Several functional categories are represented, with these categories ranging from woodworking and stoneworking equipment to fishing implements. Some of these artefacts, including the adze fragments and fishhook tab, are associated with formal tools, while others – the utilized basalt and volcanic glass flakes, for example – represent expedient implements.

Basalt flakes are the predominant indigenous artefact type in each of the three components, although their frequency decreases in the late nineteenth-century contexts. Several previous studies (Bayman 2014, 2009, 2003) have addressed the persistence of basalt adze use during the nineteenth century. Data from the present study do not allow for a specific assessment of whether the residents of Miloliʻi continued to use stone adzes in the mid-nineteenth century and beyond, principally because curated tools would likely have been well-kept and not lost or discarded. The presence of adze fragments and polished flakes, which were collected from all three components, may offer evidence of the continued retooling of adzes. Moreover, an adze flake blank struck from a basalt cobble from the *Hale Pili* suggests that Miloliʻi residents may have produced some stone implements using local raw material. Many of the flakes from the house sites, even those with no visible use wear, were too large to be associated with adze production. Instead, these flakes may have been linked to the striking of expedient flake tools to produce a sharp edge for household tasks that required cutting or scraping.

Volcanic glass artefacts were also present the nineteenth-century components in small quantities. Several unaltered nodules of volcanic glass were recovered during the excavations reported here, suggesting that local sources were available to Miloliʻi residents. While some of these items may have been collected from nineteenth-century contexts as the result of disturbance – i.e., the recycling of *ʻili ʻili* floor material – it is also possible that Miloliʻi residents continued to use volcanic glass, with its exceptional cutting properties, for informal tools during the nineteenth century when alternative cutting implements were not available.

The mid- and late-nineteenth-century contexts also included small amounts of fishing equipment, including a pearl shell fishhook tab, a hematite sinker, and cowry shell octopus lures. The presence of a fishhook tab suggests that Miloliʻi residents may have continued to manufacture fishing equipment made from local materials. Fishhooks of pearl shell produced in the mid- or late nineteenth century would have been put into use alongside iron fishhooks. Several metal fishhooks, apparently produced from bent nails, were recovered from the house sites in a range of sizes. Household goods at Miloliʻi, even during the late nineteenth century, apparently incorporated a variety of local and introduced materials.

Change and Continuity in Subsistence Practices

Another key line of evidence concerning household economies in nineteenth-century Miloliʻi is subsistence remains. Faunal analysis has demonstrated many households continued to rely for food on fish and Polynesian domesticates such as pig and dog, with dog becoming less common as a food animal over time. Several studies have shown that the consumption of shellfish, especially *ʻopihi* continued well into the nineteenth century (McCoy 2008; Morrison and Hunt 2007; Flexner 2010b). Post-contact Hawaiian household assemblages have often contained evidence for the consumption of introduced animals, particularly cow (Kirch 1992; Mills *et al.* 2013; Flexner 2010b). Evidence for

the use of butchered commercial meat, including beef, was found at elite sites in Honolulu dating to the 1830s and 1840s (Lebo 1997). However, we have little information to show to what extent those practices extended into rural areas. In general, the available data suggest that Hawaiians continued to rely on many traditional foods throughout the first part of the nineteenth century, incorporating new food items as they were available in specific parts of the archipelago.

Like the foreign goods assemblages, the subsistence assemblages from Miloliʻi show many similarities to previous studies (Table 5). Analysis of the faunal assemblage revealed that fish bones were abundant throughout the midden deposits, with Balistidae (triggerfish) and Labridae (wrasse) comprising the most common taxa. A range of other fish taxa was present, from various species of sharks to moray eel. Remains from the Polynemidae family, which contains the *moi* referred to by Kaumeheiwa as a common food source, were encountered in the late nineteenth-century contexts. Besides fish, pig and dog were present in the midden deposits from all three periods. Marine shell was abundant at each of the house sites, with *pipipi* and *ʻopihi* together comprising most of the marine invertebrate assemblage.

Nevertheless, several differences were also noted. The Miloliʻi deposits contained a highly diverse assemblage of marine taxa. The remote nature of the Nā Pali Coast region may have accounted for the wide range of species represented. The presence of a significant number of sea turtle bones in the late nineteenth-century contexts may be indicative of increasing exploitation of sea turtle following the abolition of *kapu* regulations (Rudrud 2010) or as populations began to rebound in the aftermath of Hawaiians' catastrophic population loss. A similar increase in sea turtle was also seen at nearby Nuʻalolo Kai in the uppermost deposits (Graves *et al*. 2015).

Table 4. *Artefacts of indigenous materials.*

Category		Artefact Type	Early Post-Contact	Mid-19th Century	Late 19th Century
Lithics	Basalt	Abrader		1	
		Adze flake blank (cobble)	1		
		Adze fragment		3	1
		Cobble, utilized		1	1
		Core	1	1	
		Debitage/shatter	4	5	2
		Flake	46	55	14
		Flake, polished	1	3	2
		Flake, utilized	1	3	2
		Hammerstone		2	1
		Manuport	1	1	
		Polishing stone		1	1
		Poi pounder		2	
		Tool/worked piece	1	1	
		ʻUlu maika		1	
		Whetstone			1
	Hematite	Manuport	1	11	2
		Sinker		1	
	Volcanic glass	Debitage/shatter	2	2	1
		Flake		2	
		Manuport		3	2
		Tool/worked piece	2	1	1
Shell		Fishhook tab (pearl shell)		1	
		Octopus lure (cowrie shell)	3	1	
Bone		Fishhook	1		
		Fishhook tab	1		
		Octopus lure point	1		
		Worked bone	2		
Coral		Coral file	1		
		Ground coral		1	
Total			**62**	**108**	**34**

Table 5. *Identified faunal remains and marine shell, NISP.*

Taxon	Common Name	Early Post-Contact	Mid-19th Century	Late 19th Century
Faunal Remains				
Acanthuridae	surgeonfish, tang	11	7	194
Albulidae	bonefish			1
Balistidae	triggerfish	60	63	51
Carcharhinidae	requiem shark	4	1	9
Carcharhinus melanopterus	blacktip reef shark	1		
Negaprion acutidens	sicklefin lemon shark		1	
Triaenon obesus	whitetip reef shark			1
Cirrhitidae	hawkfish	5	11	55
Gobiesocidae	clingfish			1
Holocentridae	squirrelfish, soldierfish			1
Kyphosidae	sea chub			7
Labridae	wrasse	48	60	122
Lutjanidae	snapper			1
Muraenidae	moray eel			31
Polynemidae	threadfin		6	36
Scaridae	parrotfish	7	4	1
Serranidae	sea bass, grouper		2	9
Calotomus spp.	parrotfish	4		
Artiodactyla	artiodactyl	3	6	22
Caprinae	sheep-goat	10	12	36
Cetacea sp.	whale-dolphin			1
Bos taurus	cow			1
Sus scrofa	pig	16	21	42
Canis familiaris	dog	8	5	11
Gallus	chicken	1	0	0
Cheloniidae	sea turtle	1	4	238
Marine Invertebrates				
Nerita picea	*pipipi*	2,946	4,811	7,161
Cellana sp.	*'opihi* (limpet)	910	1,305	1,843
Additional taxa	—	192	485	1,767

Another item of significance is the foreign introduction, Caprinae (sheep-goat). I interpret the sheep-goat remains as feral goats (*Capra hircus*) that still run wild on the Nā Pali Coast. Although goat bones have not been commonly recovered from Hawaiian house sites, historical accounts indicate that Hawaiians did readily incorporate goats as food animals (Handy and Pukui 1972: 253). On the Nā Pali Coast, feral goats appear to have been integrated into a diet based mainly on traditional Polynesian foods. These animals would have provided Miloliʻi residents with an abundant source of protein that could be obtained outside the market economy.

Historical evidence suggests that selling goat skins may have been a source of cash income. Goat skins were being sold on Kauaʻi as early as the 1830s for 6¼ to 12 cents apiece (Ralston 1984: 27). Eric Knudsen, who lived on a ranch near Waimea in the 1870s, described the sale of goat skins to his father by the 'Pali Men' from Miloliʻi and Nuʻalolo Kai. After concluding the transaction, the men would then go on to Waimea to 'buy what goods their wives needed and return to the Pali' (Knudsen 1947: 1). While no butchery marks were noted, the presence of goat bones offers support for Knudsen's account. Skinning provides one plausible explanation for the expedient tools collected from the mid- and late-nineteenth-century sites, although these tools likely served varied functions; additional studies, such as usewear analysis or protein residue analysis, may provide further information about the role of these tools within Miloliʻi households.

ON THE MARGINS OF THE MARKET

This paper considers the engagement of Miloliʻi residents with the market economy and how this engagement changed over time. It examines the changing proportion of foreign artefacts in household assemblages, showing that the number of these items grew through time; in fact, they accounted for nearly all the objects from nineteenth-century contexts. While these results are generally similar to previous findings from rural Hawaiian house sites (Kirch 1992; see also Flexner *et al.* 2018), this paper argues that there are reasons to identify the assemblages recovered from these house sites as distinctive. The mid-nineteenth-century contexts produced a relatively restricted number of foreign items, suggesting that the integration of foreign goods – along with, potentially, engagement with the market economy – may have occurred on a slightly later timeline in contrast to other rural settings in the archipelago.

Moreover, the late nineteenth-century contexts produced evidence that Miloliʻi residents were pursuing opportunities to provision their households outside the market economy. Residents continued to use items produced from local materials, such as basalt tools and shell fishing equipment, throughout much of the post-contact period. Perhaps most importantly, however, these households adhered to a subsistence base grounded firmly in household-level production. While Miloliʻi residents incorporated a few foreign introductions into household diets, they continued to follow a characteristically Polynesian subsistence pattern. Most, if not all, food products recovered from the house sites could have been obtained without recourse to the consumer market. For this community, engagement with the market economy may be best characterized as an interweaving of economic strategies rather than abrupt immersion in a new economic system.

The lives of the people of Miloliʻi in the late nineteenth century were characterized not by immersion in the market economy but by a distinctive melding of modes of production. For example, wooden doors with metal door locks produced in factories adorned grass-thatched houses on

stone foundations, and households may have consumed *poi* and other locally produced foods from ceramic bowls (see Kirch 1992: 182). Reused wine bottles may have been used to store water and other liquids. Flint may have been used to start fires, both in interior hearths and *imu* or earth ovens. Residents likely owned a few pieces of Western-style clothing which may have been shared or reserved for special occasions (see Cheever 1851; Jarves 1843: 103). Children learned to read and write at the Miloliʻi schoolhouse using writing slates while living in grass-thatched houses whose building methods drew on centuries of tradition (e.g., Malo 1903).

It is important to note that many objects that may have furnished grass-thatched houses during the late nineteenth century may not have been preserved in the archaeological record. Historical accounts that mat weaving persisted in some rural areas into the late nineteenth century (e.g., Rose 1990). *Kapa* was still being produced to make bedding on the eastern Nā Pali Coast in the first decades of the twentieth century (Emory 1949: 16). At nearby Nuʻalolo Kai, copious fragments of woven mats, fiber cordage, and *kapa* cloth were recovered from residential contexts dating to the mid-nineteenth century (Moore 2019; see also Graves *et al.* 2005). Thus, I suggest that the residents of the Miloliʻi house sites, even those occupied during the late nineteenth century, may have furnished them with perishable items such as mats and *kapa* bedding that are simply not visible archaeologically.

It is, however, important to emphasize that the residents of Miloliʻi did maintain economic connections with the rest of the archipelago. The presence of foreign artefacts at the nineteenth-century house sites indicates that members of these households were participating in the market economy to some degree, even by mid-century. The dog tag from House 2, moreover, shows that the people of Miloliʻi were compelled to pay taxes on livestock imposed by the Kingdom of Hawaiʻi. Historical sources indicate that the residents of Miloliʻi sold certain products, including calabashes (Lydgate 1917: 3) and goat skins (Knudsen 1947: 1), to outsiders for cash. After 1850, Hawaiian households were effectively required to have access to cash, which was needed to pay for items such as taxes and school fees (Ralston 1984: 31). Obtaining cash in small quantities by selling surplus goods thus enabled these households to remain as farmers on what may have been their ancestral lands.

CONCLUSIONS

This paper examines the emergence and spread of the market economy in nineteenth-century Hawaiʻi from the perspective of households in one of its remote hinterlands. The results of this study show that foreign goods began to dominate household assemblages only in the late nineteenth century, several decades after they did so in other parts of the archipelago. Even after they did become common, they lacked several types of consumer goods – prepared foods, cosmetics, and formal tools – seen in contemporaneous assemblages. Moreover, the residents of Miloliʻi incorporated these items within a household *milieu* that existed primarily outside of the market economy – in other words, continuing to produce household implements at the household level and to rely on small-scale fishing and farming for food. Rather than quickly becoming immersed in a livelihood based on the market economy, the residents of Miloliʻi appear to have engaged with Hawaiʻi's emerging consumer economy in selective and expedient ways.

Considering local variability as a critical factor in guiding the outcome of culture change, the study focuses on an area of Hawaiʻi that occupies what might easily be described as a marginal environment and one that, by the late nineteenth century, was outside the area that could be profitably exploited by industrial agriculture. By considering participation in the market economy as the result of individual decisions made in response to specific local circumstances, it examines how the residents of a remote area relied on separate but interconnected economic strategies to support the household. Innovative tactics such as the hunting of feral goats for meat and hides offered a way to take advantage of newly introduced animals in ways that could help to provide a cash income and thus keep these households on their traditional lands.

These findings, however, should not be taken to indicate that Miloliʻi residents did not experience or initiate significant changes in their lives during the nineteenth century. On the contrary, I suggest that minimizing engagement with the market economy – by avoiding certain types of consumer goods and maintaining a focus on household-level production – was part of an active approach that allowed these households to maintain a certain level of economic autonomy during this turbulent period in Hawaiian history.

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