Archaeological investigations of CA-SON-2294/H, including one controlled excavation and one salvage excavation, yielded remains of two structural types linked to native workers living on Adobe Creek and serving Mariano Vallejo’s Rancho Petaluma. Stone alignments revealed during creek bank rehabilitation suggest a walled structure destroyed during previous embankment collapse. Upstream, clay daub from traditional structures was recovered with valued items and household goods likely discarded during efforts to halt smallpox devastation. To increase understanding of cultural land use on the Adobe Creek flat, we anticipate that CA-SON-2294/H materials will point toward a return of the epidemic-beleaguered population to traditional building methods.

Archaeological materials suggest that native populations, severely diminished due to the 1837-1839 Miramontes Smallpox Epidemic north of San Francisco Bay, reestablished specific traditional lifeways on a Mexican Republic Era rancho. The study area is a large cultural site (CA-SON-2294/H; hereafter referred to as SON-2294/H), the remnant of Rancho Petaluma’s base for rancho-period native workers presently within Petaluma Adobe State Historic Park, in Sonoma County. The site covers most of an ancient alluvial floodplain formed by Adobe Creek which flows along the base of a hill crowned by Rancho Petaluma Adobe. Over four decades, the portion of SON-2294/H situated on the floodplain was subject to controlled archaeological studies by Charles Gebhardt (1963), Stephen Silliman (2000), and one emergency monitoring documentation of disrupted pit features (Bisbee 1961). On the Adobe Creek embankment, the west edge of the site, two small excavated areas, one controlled (Silliman 2002) and one emergency recovery (Parkman 2007), contribute information about early rancho development and events not revealed in prior archaeological investigations.

Based on cultural materials recovered from a creekside cultural feature (referred to as the New Year Feature, or NYF), exposed during 2005-2006 flooding that caused embankment collapse, we hypothesized that this small but well-defined portion of SON-2294/H resulted from efforts of local inhabitants to stop the 1837-1839 Miramontes Smallpox Epidemic that swept the northernmost Mexican Republic frontier (Alvarez and Parkman 2014). Continuing the research along this course of inquiry (Alvarez and Parkman 2014, 2015, 2016, 2017), we suggest that in response to this tragic event, valued items, such as a clamshell disk bead manufacturing kit, including all stages of beadmaking and drill implements, were lost or deposited in an existing trench meant to drain the flat during long-ago flooding. Burned materials including charcoal and wood fragments, as well as personal items, notably glass and shell disk beads, support the hypothesis that historic period burning of infected houses and belongings conformed to customary practices for halting spread of virulent disease (Bisbee 1961; Gebhardt 1963; Silliman 2000; Alvarez and Parkman 2014).

Ethnographic information supports local traditional practices of burning houses and possessions of deceased persons. For example, consultants for Isabel Kelly’s 1930s ethnographic work, Tom Smith, a Bodega Bay Miwok and Maria Fria Copas, a Nicasio Coast Miwok, provide traditional options for disposal of a deceased person’s property. Although not as stringent as European methods for eradicating infectious disease, both consultants concur that a deceased individual’s home and personal possessions could be burned (Collier and Thalman 1991:402). Alfred Kroeber (1932, 1953) discussed burning of the dead and possessions...
among central and coastal California native people. Customs described, however, do not reflect traditional practices for halting virulent disease, suggesting that the need had not arisen or was poorly understood.

Finally, unique NYF items, including large majolica jar sherds and metal objects, especially a hand-etched brass button, linked to ethnohistoric information, are indicators of a hierarchy among the pre-epidemic labor population residing in the rancho workers’ base camp (Alvarez and Parkman 2015, 2016, 2017). Unique objects suggestive of domestic or military personnel in trusted positions include cabinetry hardware, a traveling chest buckle, and a hand-wrought spiked counterweight required for transporting and positioning a flag standard.

NATIVE LIFEWAYS ON RANCHO PETALUMA

Current research focuses on pre-epidemic status, strength, and lifeways of native populations residing on local Mexican Republic Era ranchos, and circumstances surrounding a significantly reduced and beleaguered post-epidemic population. Inquiries are directed to the archaeological record coupled with historic and ethnographic information. Are cultural materials and documents able to assist identification of the crucial transition between pre- and post-epidemic native workers living situations at Rancho Petaluma? Based on extensive Rancho Petaluma archaeological studies, Silliman (2000) concluded that Adobe Creek flat residents utilized both traditional and European lifeways and materials while serving Rancho Petaluma. It is likely that there is evidence to expand Silliman’s interpretation and to demonstrate that traditional lifeways, represented by SON-2294/H housing remains, replaced pre-epidemic adobe structures in a psychologically and physically more communal, village-like setting, such as McKern (1923:160) found organized by the Patwin people: “Permanent houses were situated in groups at centers of convenience, easily protected and . . . Close to essential supplies . . . Water, fish, and vegetable products. Such a group of houses constituted a village.”

Study Area and Pre-Epidemic Life on Rancho Petaluma

Throughout California, archaeological investigations, as well as depictions of California missions, commonly detail neophyte housing as European style barracks intended to separate genders and families. Following mission secularization and buildup of Mexican Republic Era California, it is likely that similar structures accommodated native laborers and servants on ranchos, especially those working within or close to homes or gardens.

Historic and Ethnographic Research

Initial examination of ethnohistoric and historic information attempted to discover descriptions of traditional house construction represented in the archaeological record. Locally, Mexican Republic Era exploitation of missionized native people is well documented; however, it remains unclear what their living situations consisted of on Northern Frontier ranchos, specifically Mariano Guadalupe Vallejo’s Rancho Petaluma. And, we had questions:

- Did rancho owners such as Vallejo provide mission-like barracks for native workers?
- Can adobe housing be confirmed archaeologically for pre-epidemic workers on Vallejo’s rancho?
- Is CA-SON-2294/H historic soil sufficiently deep to separate pre- and post-epidemic structural remains?

Soon after Mexico won independence from Spain, Vallejo was directed to the new Republic’s frontier, north of San Francisco Bay. Initially charged with halting Russian expansion from long established coastal
settlements to the hinterland, Vallejo eventually oversaw Mission San Francisco Solano secularization and beginnings of Sonoma Pueblo. West of the Pueblo, Vallejo’s Rancho Petaluma encompassed nearly 67,000 acres between Sonoma Creek and Petaluma River, to the shore of San Pablo Bay. In addition to shaping Sonoma Pueblo, commencing in 1834-1835 and continuing for nearly a decade, Vallejo constructed a two-story, fortress-like adobe on the lowest slopes of Sonoma Mountain, above Adobe Creek.

After Mission San Francisco Solano’s secularization, emancipated neophytes who received goods and cattle when mission properties were dispersed were harassed by settlers and native people who had rejected missionization. Seeking protection, the neophytes simultaneously expanded Vallejo’s herd and increased his workforce. These skilled people formed the core of vaqueros, artisans, military personnel, and domestic staff working in Sonoma Pueblo and on Vallejo’s Rancho Petaluma. It seems likely that most Pueblo and rancho native laborers were trained at nearby Mission San Francisco Solano, which housed speakers of diverse languages from the coast, delta, and Napa regions (Table 1). Neophytes from missions San Rafael, San Francisco, and San Jose also returned to homelands within Petaluma, Sonoma, and Napa valleys (Milliken 1995).

Table 1. Native People at Mission San Francisco Solano at Secularization (Milliken 1995:228-261).

<table>
<thead>
<tr>
<th>Tribal Name</th>
<th>Language</th>
<th>Territory</th>
<th>Mission Solano 1823</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caymus</td>
<td>Wappo</td>
<td>Napa Valley, north of San Pablo Bay</td>
<td>Approximately 240 from 4 tribes moved to Solano, 5 baptisms</td>
</tr>
<tr>
<td>Chemoco</td>
<td>Wappo/Patwin</td>
<td>Wooden Valley, northeast of Napa Valley</td>
<td>Between 1824 and 1834, 34 baptisms</td>
</tr>
<tr>
<td>Chocoime</td>
<td>Coast Miwok</td>
<td>Sonoma Creek Valley</td>
<td>Many alive in 1823 moved to Solano (homeland) from San Jose and San Francisco</td>
</tr>
<tr>
<td>Huiluc</td>
<td>Wappo</td>
<td>Upper Sonoma Creek</td>
<td>36 baptized between 1825 and 1832</td>
</tr>
<tr>
<td>Licatiut</td>
<td>Coast Miwok</td>
<td>Two Rock area</td>
<td>At San Rafael; Vallejo treaty with them, 1834</td>
</tr>
<tr>
<td>Malaca</td>
<td>Patwin</td>
<td>North of Suisun Bay</td>
<td>“a few” baptized, 1827-1832</td>
</tr>
<tr>
<td>Petaluma</td>
<td>Coast Miwok</td>
<td>Petaluma River Valley</td>
<td>1824 (baptized at missions San Francisco, San Jose, San Rafael, Solano)</td>
</tr>
</tbody>
</table>

Estimates vary regarding numbers of people involved in Vallejo’s many enterprises. The logistics of manufacturing tens of thousands of adobe bricks and transporting redwood beams and lumber from northern Sonoma County forests to build a two-story structure and outbuildings suggest a large labor force. Additionally, prior to and during adobe construction, fields were plowed and seeded with grain that eventually became a vital export commodity requiring manpower to till, sow, and harvest fields, all with the use of oxen (Carrillo 1875). Julio Carrillo (1875) stated that, “General Vallejo in his Petaluma estate often employed one hundred and fifty pairs of oxen plowing his very extensive fields. Each pair of oxen was in [the] charge of an Indian….” No doubt cooks, animal tenders, building craftsmen, tool makers, and leather workers were needed immediately as both Sonoma Pueblo and Rancho Petaluma grew. Per Carrillo (1875), the Mexican Republic economy depended on the Indians.

As adobe construction progressed, it became necessary to care for a sizeable labor force. Subsistence-oriented tasks were needed. Cattle and sheep herds grew, and fruit and vegetable gardens were planted; and finally, clothing, bedding, and housing for workers were required. Historic references allude to small adobe houses constructed on or near the rancho; Salvador Vallejo, M. G. Vallejo’s brother, claimed to have resided in a small house as early as 1833. Also, the mission padres were anxious about settler intrusion into Petaluma Valley and sent neophytes to “build a hut” to claim land for the mission near the area (Bancroft 1885:3:255). These small adobe structures may have become worker residences during rancho development.

Vaqueros were vital for cattle husbandry and development of the hide and tallow production for export; shepherds, gardeners, weavers, and domestic staff further expanded the native work force. Prior to
the 1837-1839 epidemic, between establishing Sonoma Pueblo, construction of fortified holdings at Rancho Petaluma, and development of subsistence and export commodities, conceivably, a workforce of 2,000 to 3,000 was indispensable, validating Vallejo’s claim that his weavers made yards of rough cloth and several thousand blankets for his workers (Vallejo 1889). Furthermore, within a few years of Vallejo’s initial efforts, prior to 1840, over 206,000 acres and the location of James Dawson’s Sawmill on Salmon Creek were granted on the Northern Frontier. These large landholdings also required many skilled people, laborers, and domestic staff.

The Miramontes Smallpox Epidemic

In May 1837, approximately two years from beginning construction of Rancho Petaluma Adobe, Ignacio Miramontes returned to Pueblo Sonoma from Fort Ross, reporting incidences of smallpox at the Russian settlement. Thus, Miramontes ignited the smallpox epidemic that scoured the region north of San Francisco Bay (Vallejo 1914). Eventually, it spread along Russian River, up to the Clear Lake region, in Petaluma, Sonoma, and Napa Valleys, as well as in the Central Valley as far north as Mount Shasta. Historic sources and personal recollections indicate that Vallejo did everything to stop the disease, except vaccinate his Indian labor force and militia. Chief Solano, Vallejo’s close friend and ally, was vaccinated, but for some reason the remaining Indian population was not.

Vallejo took every other reasonable precaution, pressing for use of the vaccine and requesting Governor Alvarado to invest him with authority to compel its use (McKittrick 1944:141). He sent to Santa Cruz for lime to wash interiors of workers’ housing. It was reported that Father Quijas, Vallejo’s brother Salvador and a sergeant, created crude brushes from lamb’s wool fastened to the ends of long sticks so that the Indians could paint dwelling interiors (McKittrick 1944:141-142).

While the extent of epidemic deaths cannot be accurately ascertained, estimates vary from 40,000 to 300,000 native people lost (Cook 1939:185:57; McKittrick 1944:142). After the disease ran its course, Chief Solano, whose pre-epidemic following of Patwin and Suisun people numbered about 40,000 reportedly was left with only 200 (Vallejo 1914). Vallejo estimated that 70,000 Indians perished before the epidemic ended, and reportedly, Napa Valley Indians were annihilated. Many scholars dispute these numbers (Cook 1939:185:57; Boyd 1999) but all agree, regardless of exact numbers of deceased native people counted in this terrible event, local populations were, for the most part, decimated.

Accuracy notwithstanding, historic documents reveal a grim picture of loss; more to the point, however, there is no information regarding native peoples’ recovery from this devastation. Carrillo (1875) said, “When the Indians died, we were compelled to discontinue to a great extent our agricultural pursuits.” No doubt, Rancho Petaluma adobe construction lagged or stopped, accounting for the overall length of time required for building it; while Sonoma Pueblo became the focus of energy. Of necessity, the hide, tallow, and grain enterprises had to continue, even if in a reduced capacity. How missing labor numbers were compensated for is unclear, possibly they were not replaced. During the following decade, visiting Americans mistook lethargy as cause of the Mexican Republic’s lack of development; they considered neither privation, drought, nor lack of labor in their criticisms.

Ethnohistoric Information

Ethnographic works linked with native people’s lifeways on Rancho Petaluma, as well as historic documents, provide information regarding traditional house manufacturing processes. Regionally, literature based on ethnographic information provides details about traditional practices for making houses and other structures; but, for the most part, information we required was elusive. Specifically, we sought a connection between archaeologically recovered baked clay daub and descriptions of traditional use (Figure 1). Mention of clay or earth covering grass or tule structures is found in Driver (1936) and Barrett (1975), but was not described as daub, a conventional archaeological term (Strudwick 2005).
Isabel Kelly’s ethnographic interviews with Tom Smith (Bodega Miwok) are most specific relative to the use of clay as daub in construction of redwood bark covered houses. Smith said, “Mix mud and grass and chink between the slabs; otherwise it leaks. Has to have more mud. This house,” he states, “lasts longer than one with grass covering” (Collier and Thalman 1991:178). The 1875 narrative of personal observations by Lorenzo Yates includes description of clay use on a Pomo dance house in the Clear Lake area. Yates (1975:2) noted that “ridges of common clay” form “parallel lines lengthwise over the long passageway” resembling a tunnel into the Dance House. Similarly, Barrett (1975:42) described the construction of a “wealthy” man’s earth-covered lodge:

The roof was constructed with great care. Brush, grass, and matting over a pole frame were covered with three or four inches of earth. Over this was plastered a layer of clay . . . mixed in baskets and poured on from the top downward, being spread and patted into place by means of flat, wooden paddles.

While these applications of clay may seem remote from current research goals, Yates (1975) and Barrett (1975) provided visual information that is valuable for interpreting archaeological materials.

Archaeological Data

Heizer (1953) rejected the use of clay, including clay “daub,” in the Napa region even while his contemporaries were beginning to recognize archaeological clay used as chinking or daub elsewhere. Richard Beardsley (1948) presented a relevant archaeological explanation while formulating local culture sequences. He interpreted clay remnants as having been “used for wall or smoke-hole chinking or perhaps as plaster on stick and grass house coverings” (Beardsley 1948:14). Later, Beardsley (1954:38) noted clay “bearing impressions of sticks and tule” at the Estero site, upstream from Drake’s Bay. These, he said, “are slightly shaped on one surface and perhaps are part of mud covering or chinking of a structure [with] an outer covering of brush, grass, and clay” (Beardsley 1954:38).

While Beardsley’s (1948, 1954) comments are pertinent to a much earlier time period on the Marin County coast, they are the most specific interpretations of archaeological clay daub associated with local traditional house construction as described by Kelly’s consultant Tom Smith (Collier and Thalman
1991:178). Beardsley’s is a clear description of clay used as daub in local traditional house construction that appears in a well-defined archaeological record. Similarly, White and Fredrickson’s (1992) discussion of the regional Clear Lake archaeological record links clay fragments with grass impressions, likely used as daub, to an earlier time period that also corresponds to Yates’ (1975) and Barrett’s (1975) descriptions of Pomoan traditional building construction.

CA-SON-2294/H Materials and Features

Rock alignments and baked clay daub revealed at SON-2294/H, a site closely connected to the time frame and events discussed here, may augment our understanding of pre- and post-epidemic housing (Table 2). Conducting archaeological investigation on the east bank of Adobe Creek, both Gebhardt (1962) and Silliman (2002) found linear rock features, possible adobe structural foundations, near one another. About 50 cm upstream from Silliman’s investigation prior to creek bank rehabilitation, the New Year Feature (NYF) was revealed in the winter of 2005-2006 when the creek embankment collapsed. Fragments of baked clay daub with grass or stem impressions were recovered at a soil level comparable to depths of both Gebhardt’s (1962) and Silliman’s (2002) discovery of cobble features. Extreme weather resulting in NYF soils oozing from the eroding embankment made strata difficult to define (Parkman 2008).

Table 2. Features Revealed Along Adobe Creek, Adjacent to Residential Flat.

<table>
<thead>
<tr>
<th>CA-SON-2294/H</th>
<th>Feature</th>
<th>Depth to Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gebhardt 1962</td>
<td>Unit 31</td>
<td>8” (in a 5’ x 5’ excavation unit)</td>
<td>rock quadrangle, 22’ east-west, 20’ north-south</td>
</tr>
<tr>
<td>Silliman 2002</td>
<td>A</td>
<td>7 1/2” 19 cm.</td>
<td>linear rocks, 2 cobbles wide, 2 cobbles deep</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>8 5/8” 22 cm.</td>
<td>linear rocks, 2 cobbles wide, 2 cobbles deep</td>
</tr>
<tr>
<td>Parkman 2006</td>
<td>NYF</td>
<td>7”-.9” (~18-24 cm)</td>
<td>cross-section of pit-like feature, revealed as historic trench perpendicular to creek</td>
</tr>
</tbody>
</table>

In addition to Features A and B, consisting of the remnants of a possible structural foundation (Silliman 2002), Silliman’s (2000) earlier investigation downstream in the east bank midden (14% total volume excavated at SON-2294/H) yielded construction-related materials in excessive quantities compared to the rest of the site’s floodplain excavation. These items included 88% (n = 368) of the nails from the entire site, roofing tile (n = 9), and wood fragments (n = 35). Charcoal was abundant throughout the site as was “baked clay,” undifferentiated as clay daub. Silliman (2002) interpreted this midden area a “dumping ground” alongside Adobe Creek, rather than a kitchen midden, quantities of dietary remains (50,000+ faunal) notwithstanding.

Parkman’s (2007) creek bank NYF recovery of baked clay daub, burned wood, and charcoal as well as the “Baked Clay” and abundant charcoal Silliman (2002) reported from the alluvial flat and the east bank midden are markers for intense burning. As previously mentioned, burned personal items including glass and clamshell disk beads also were found on the flat and at NYF providing parallel support for the impression of considerable burning within the labor force residential area.

CONCLUSIONS

Historic observations as well as archaeological evidence from SON-2294/H confirm the presence of adobe structures in the residential workers’ area on the floodplain. Additionally, burned materials emphasizing the destruction of homes and property and disposal of remnant material, including valued items, points toward
conflagration associated with halting virulent disease. It is likely that during the smallpox epidemic, housing was razed, and as Silliman (2002) suggested, remnants of destroyed structures were deposited on or near an existing midden. Similarly, the NYF trench received valued items, possibly heirlooms and unique possessions along with some structural debris. Baked clay daub from the NYF trench and elsewhere in the site’s historic soils suggests that ruination of substantial adobe homes meant the servant population coped with loss of their people, goods, and homes by returning to the use of traditional housing and more communal lifeways on the alluvial floodplain.

While conclusions may seem tenuous regarding the ability of archaeological material and historic documents to aid in identification of the critical pre- and post-epidemic transition of native lifeways on Rancho Petaluma, the aggregate information provides insights to this topic not previously discussed. Barracks such as those used for neophyte housing at Mission San Francisco Solano probably were natural architectural models for housing Petaluma Rancho native laborers, while domestic staff resided in smaller adobe homes near Adobe Creek.

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