A TALE OF TWO ROCK SHELTERS AT SADDLEBACK RANCH

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This article compares and contrasts two rock shelter sites at Saddleback Ranch in Yuba County, California. In the spring of 2018, starch grain residue samples were taken from bedrock milling features at both sites. This article provides the preliminary results from the starch residue collected, analyzes the sites’ configuration and cultural constituents, and discusses the Native American tribes that settled in the Saddleback Ranch region. This article posits that these two rock shelters are part of a small Nisenan village cluster in Yuba County. Examining the starch residue results will expand on the knowledge of their paleoenvironment and use of local flora.

The Anthropological Studies Center at Sonoma State University in Rohnert Park, California, has ongoing investigations of the prehistoric and historic archaeology of Saddleback Ranch in Yuba County. Archaeologists discovered two unique prehistoric rock shelters during the 2017 survey season, designated as sites CA-SBR-0317-11 (Rock Shelter 1) and CA-SBR-1117-41 (Rock Shelter 2) (hereafter referred to as SBR-0317-11 and SBR-1117-41). The purpose of this article is to compare and contrast these two rock shelter sites by analyzing their configuration and cultural constituents. Samples were taken from bedrock milling (BRM) features at both sites during the spring of 2018 to analyze for starch grain residue. This article discusses the Native America tribes that settled in the Saddleback Ranch region, along with their paleoenvironment and use of local flora. Starch grain residue analysis potentially contributes data directly related to what the local Native American tribes were eating and using as material for tools or basketry.

The two rock shelters are distinct: Rock Shelter 1 (SBR-0317-11) appears to have multiple rooms and a single mortar within the shelter, while Rock Shelter 2 (SBR-1117-41) has a single chamber with several BRM features inside the shelter. The two shelters are located at approximately 580 ft amsl. This article posits that these two rock shelters are part of a Nisenan small village cluster, with one being the home of a family with a newlywed family member/offspring. Will the starch grain analysis provide data that emphasizes the similarities between the two or will it provide more differences?

SADDLEBACK RANCH NATIVE AMERICAN HISTORY

Saddleback Ranch is nestled at the base of the Sierra Nevada foothills in Yuba County, on the Browns Valley Ridge northeast of Marysville. Based on Riddell (1978), Wilson and Towne (1978), and Kroeber (1925), this geographic region of California was home to the Maidu people (Figure 1). The Maidu have been divided into three different tribelets based on three different languages (Kroeber 1925:392). The southern Maidu call themselves Nisenan and the two to the north have been further differentiated into two separate groups, Maidu and Konkow (Kroeber 1976:392). The Nisenan occupied the Yuba, American, and Bear rivers region. This landscape varied from the plains of the Sacramento Valley to the peaks of the Sierra Nevada, as well as oak grasslands and marshes (Wilson and Towne 1978:387). The paleoenvironment of the Nisenan was abundant with game, fowl, fish, and plant resources.

The northeastern tribe call themselves Maidu, but they were also known as “mountain Maidu” (Riddell 1978:370). This group inhabited mountain valleys from Lake Almanor to the Sierra Valley. In this geographic region, the Maidu were spread to the upper reaches of the north and middle Feather River and to the valleys of the Susan River. The tribelets were named after the valley where they lived (Riddell 1978:370). The Northwestern Maidu are known as the Konkow/Concow. Their territory included a portion of the Sacramento Valley along the Butte and Chico creek watercourses. It also spread north in the Sierra Nevada foothills east of Chico and Oroville along the branches of the Feather River convergence and upper
Butte and Chico creeks (Kroeber 1976:393). This region presented a savanna-like environment with oak woodlands and wild grasslands.

Based on the topographical description of the three Maidu groups, Saddleback Ranch lies within Nisenan territory, which has been further divided into hill and valley traditions (see Figure 1). There are two distinctions between Hill and Valley Nisenan. The Hill Nisenan lived in smaller group clusters, usually 15 to 25 individuals, while the Valley Nisenan had larger villages of several families of up to about 500 individuals. The Valley Nisenan either occupied a single large valley village site or several small clusters of immediate family sites, while the Hill Nisenan positioned their village clusters on ridges and large flats along streams. All the ethnographic data indicate that the permanent settlements of the Hill Nisenan are located on ridges that are separated by parallel streams and knolls or terraces partially up the mountain (Kroeber 1925; Riddell 1978; Wilson and Towne 1978). Both rock shelter sites at Saddleback Ranch, SBR-0317-11 and SBR-1117-41, are on a ridge of the Sierra Nevada foothills. Based on ethnographic data, the rock shelters at Saddleback Ranch may have been homes to Hill Nisenan families.

Figure 1. Map of Maidu territory. Image courtesy of the American River Natural History Association.
ENVIRONMENTAL SETTING

The vegetation within the Central Valley and Sierra Nevada provinces are extensive and diverse. These zones include valley grasslands, riparian woodland, freshwater marshes, alkali sink scrubs, valley and foothill woodland, chaparral, montane forest, subalpine forest, montane meadows, and alpine fell-fields (Lightfoot and Parrish 2009:303). The Maidu lived in an incredibly diverse ecological territory. One can only imagine the broad array of flora spread throughout these habitats. They lived in mountainous environment that covered with snow during winter. At the turn of the seasons, the snow would melt and create marshes and soft meadows. Because of this freeze-thaw cycle, the Maidu did not occupy the middle of meadows; instead, they preferred the edges of valleys.

The Nisenans’ local environment provided abundant year-round food, and individual families would work together to gather food sufficient to provide for their family clusters. Food was gathered on a seasonal basis. These tribelets did not depend on a single crop, they gathered multiple staples. According to Lightfoot and Parrish (2009:303), the Nisenan were one of the tribes that maintained individual or family-level ownership over some oak trees and the fruit they bore. Maria Potts is a Northern Maidu woman who describes her homeland with exuberance. She explains how beautiful it is with its open valleys and meadows abundant with wildlife and wild berries. She says, “Our country was rich in nature’s food, there for the taking” (Potts 1977:8). The wide variety of staples collected included acorns, buckeye nuts, sugar pine nuts, hazelnuts, roots, wild onion, wild sweet potato, wild grass seeds, and wild carrots (Wilson and Towne 1978:389).

MAIDU DIET: PLANTS AND THEIR USAGE

California has a diverse ecosystem of flora. In the land of Histum Yani, which is the Maidu name for the Sutter Buttes where the Nisenan lived and flourished, the land was abundant with wildlife and natural food. The Maidu utilized the flora and fauna to the fullest for subsistence, medicinal, religious, and material necessities (Riddell 1978:373). The Maidu have a polyphagous diet, multiple staples as previously described, but one of the major staples was ooti, the acorn. Scholars have suggested that the Maidu preferred the Quercus chrysolepis (canyon or golden oak) and the Q. wislizeni (interior live oak) (Kroeber 1976; Lightfoot and Parrish 2009; Riddell 1978; Simpson 1977). The interior live oak was known as Babakam Tsaa; this ooti was soft but bitterest of all. The overall favorite, however, was the Q. chrysolepis (black oak), or Hamsum Tsaa (Simpson 1977:57). I consider this the Goldilocks of ooti; it was bitter but not as bitter as the interior live oak. Hamsum Tsaa was hard but not too hard like the white oak, Tsakawn Tsaa, which dried as hard as a bone (Simpson 1977:57). The black oak had the perfect acorn in the land of Histum Yani, which is why it was gathered first and stored for long winters.

There were several other nut meat sources that were exploited by the Maidu/Nisenan, including Pinus lambertiana (sugar pine nuts), Corylus cornuta (hazelnuts), Aesculus californica (buckeye nuts), Umbellularia californica (California bay laurel nuts), and Torreya californica (wild nutmeg). Buckeye nuts are leached using the same technique as acorns, although they must be leached longer to remove all the poisonous bitter prussic acid (Riddell 1978:374). Once they were done being leached, the nuts would get roasted. Sugar pine nuts were roasted and the leftover charcoal remnants were used to treat burns and/or sores. Plaster made from crushed Pinus edulis (silver pine nuts) was also used to treat burns. Milk made from pine nuts was used as a breast milk substitute for newborn orphan babies, called pine nut soup (Van Allen Murphey 1958:25). Of all the nuts utilized by the Maidu, the nutmeg required the most intensive processing, which took several months to complete.

The underground food resource from roots, tubers, corms, and bulbs provided carbohydrates and starches to the Maidu diet. The principal bulb was the camas and the wild carrot (Queen Anne’s lace). The Camassia esculenta (camos) is the queen of all bulbs in the interior mountain region and it is best to dig up the bulbs after the seeds are ripe (Van Allen Murphey 1958:14). Brodiaeas are a common wildflower sub-
family in the lily family, many species exploited by the Maidu. The bulbs of the flower are called corms. This food staple can be eaten raw, fried, boiled, or roasted in earth ovens until they are soft. A few of these species are *Dichelostemma pulchella* (blue dicks), *Triteleia ixioides* (golden brodiaeas), *Brodiaea elegans* (elegant brodiaeas), and *Triteleia laxa* (Ithuriel’s spear). There are 38 species of *Allium* (onion) in California. The onion had a dual purpose for the Maidu beyond its edible component; red dye was obtained from the skin of *Allium haematochiton* and an ointment was made from crushed onion and garlic to relieve itch or pain from bug bites. The juice from the onion was also boiled down to syrup that was used for colds or throat irritations like a modern-day cough syrup.

Leaves, twigs, and stems of the local flora were eaten raw, crushed to make a poultice or salve, used for seasoning, and to make teas. The *Trifolium gracilentum* (wild rose clover) has three leaves and was eaten raw or steamed. *Claytonia perfoliata* (miner’s lettuce), *Chenopodium* (goosefoot), and *Mimulus guttatus* (monkey flower) were also eaten raw in salads or cooked like any leafy green. *Mentha arvensis* (wild mint) and *Plantago major* (plantain) were often used to make teas for nausea, headache, and heartburn. *Vitis californica* (California wild grape) leaves filled with grasshoppers were placed in ovens to season baked goods (Lightfoot and Parrish 2009:371). The leaves and stems of *Arctostaphylos patula* (Greenleaf manzanita), *Plantago major* (plantain), and *Eschscholzia californica* (California poppy) were used to create a poultice. The leaves of the *E. californica* were used for a toothache to relieve the pain. A poultice of plantain was applied to battle bruises while the mixture of bruised leaves and stems was applied directly to open wounds to amplify the healing process. A poultice of *A. patula* (Greenleaf manzanita) combined with *Bryophyta* (black moss) was applied to sores that would not heal; the black moss added antibacterial properties.

The *U. californica* is a multipurpose tree. Not only was the nut used as a food source, but the bay leaf was used in cooking and for its medicinal properties. Van Allen Murphey (1958:43) noted that the leaves were crushed and bound to the head to relieve headaches. According to Bringle Clarke (1977:19), the dry leaves were made into a tea for stomach ailments. A bough of bay leaves would be burned inside of Maidu lodges to fight against colds; the effect is similar to that of a humidifier with essential oils. *Juniperus* (juniper) also had many uses. The berries were used to make a tea to help with kidney problems. Expecting mothers started drinking juniper tea a month before their due date and then every morning to promote muscle relaxation in preparation for labor and childbirth (Hendrix 1985:135). The Maidu used a variety of seeds from grasses, weeds, and wildflowers, including *Phleum pratense* (timothy), *Avena fatua* (wild oat), *Lupinus* (lupine), *Calandrinia ciliata* (red maids), *Madia* (tarweeds), and *Wyethia mollis* (mule’s ear). Seeds were either roasted like the *Echinocystis* (wild cucumber) and *Helianthus annuus* (sunflower seeds) or made into pinole, a meal or flour, like *Juncus* spp. (rush), *Ranunculus californica* (buttercup), and *Clarkia amoena* (farewell to spring). The seeds were gathered in late spring to the end of summer.

### THE TWO ROCK SHELTER SITES

The two rock shelters are nestled at the base of the Sierra Nevada foothills in Yuba County, in Hill Nisenan territory (Figure 2). The terrain for both is grassy oak woodland with many varieties of plant species. Both sites contain blue oak, monkey flower, thistle, and fern. Rock Shelter 1 is 640 m southwest of Rock Shelter 2. Rock Shelter 1 is on a steeper slope while Rock Shelter 2 has level ground outside the shelter (Figures 3 and 4). Both sites are along the same contour line at 540-580 ft amsl. During survey, every cultural observation was assigned a numeric context (Ctx.) designation.

**Rock Shelter 1 (SBR-0317-11)**

Rock Shelter 1 (SBR-0317-11) is located under a large boulder overhang with internal dimensions measuring 4.8 m north-south in length by 3.3 m east-west in width and 1.8 m high at its highest point (Figure 3). Its approximate floor area is 3.78 m². Angular cobbles were removed from within the shelter.
Figure 2. Areal image of Hill Nisenan territory.

Figure 3. Rock Shelter 1 (SBR-0317-11).
to clear the floor and to create a flat, patio-like area (Ctx. 3320.03) in front of the rock shelter opening, thereby extending usable space in this rocky environment. This rock shelter contains two distinct cleared areas under the same rock overhang separated by a ground level BRM feature (Ctx. 3318). The two areas have the appearance of distinct rooms within the shelter. Ctx. 3320.01 is a clearing under the rock overhang measuring 2.1 m north-south in length by 1.8 m east-west in width and 1.8 m high at the opening. The second and larger clearing, Ctx. 3320.02, measures 2.7 m long east-west by 1.5 m wide north-south and 1.8 m in height at the opening.

This site contains eight BRM features on boulders upon the slope west of the rock shelter at varying distances. The milling surfaces are generally shallow, ranging from one to four cm in depth, and the number of cups per boulder is low, ranging from one to three with one being the most common (Figures 5 and 6). Four artifacts were observed at the site, including Ctx. 3314, a battered river cobble at the edge of the site near BRM feature Ctx. 3313. It could possibly have been a pestle or a cooking stone. The remaining artifacts are located at the shelter. Ctx. 3320.04 is a large flaked greenstone tool or core with a chopper shape design. This tool was found within the larger shelter room. Ctx. 3320.05 is a cobble tool that is ground on one end. Ctx. 3320.06 is a flaked tool similar to Ctx. 3320.04, but just a smaller size.

When this site was observed in early spring, the vegetation consisted of blue oaks, monkey flower, wild cucumber, thistle, soap root, caterpillar flower, fern, and blue dicks. Wild cucumber seeds and the leaves of monkey flower had a dual purpose for the Nisenan; they were consumed as food and used for their medicinal properties. Wild cucumber seeds were roasted and eaten by the Nisenan to help with kidney problems (Hendrix 1985:135). The root of the wild cucumber would be ground up and mixed with sugar to help with saddle sores (Hendrix 1985:135). Monkey flower leaves were only consumed if they were picked before the plant flowers, presumably in early spring. The leaves could be eaten raw like any other salad leafy green. The raw leaves could also be used to treat rope burn (Hendrix 1985:135). Blue dicks are a common wildflower in California. The corms of the plant were utilized by the Nisenan like many other wildflowers in the Brodiaea family. Corms could be eaten raw, steamed, fried, or roasted. The best time to harvest the bulb is after the seeds of the flower have matured (Van Allen Murphey 1959:14).

**Rock Shelter 2 (SBR-1117-41)**

Rock Shelter 2 (SBR-1117-41) is 6.7 m east-west by 6.9 m north-south with three distinct openings in the north, south, and west sides (see Figure 4). Its approximate floor area is 46.23 m². The north entrance clearing is 60 cm high while the south entrance clearing is 90 cm high.
Figure 5. Comparison of cultural material at Rock Shelter 1 (SBR-0317-11) and Rock Shelter 2 (SBR-1117-41).

Figure 6. Comparison of bedrock milling features at Rock Shelter 1 (SBR-0317-11) and Rock Shelter 2 (SBR-1117-41).
This site contains 23 BRM features with five of the milling features inside the rock shelter. The number of milling surfaces on each boulder ranges from one to five, with one being the most common. The depths are generally shallow, although there are deeper than average milling surfaces at the site, ranging in depth from 0.8 cm to 16.5 cm.

Seven artifacts were observed within and adjacent to Rock Shelter 2. Ctx. 3413.06 is a pestle observed north of the shelter, near BRM feature Ctx. 3413. The remaining six artifacts were found within the shelter. Ctx. 3419.01 is a battered field rock worn on one end. Ctx. 3419.02 is a rounded greenstone flake. Ctx. 3419.03 is a basalt tertiary reduction flake and Ctx. 3419.04 is a rounded fire-cracked river rock, possibly a cooking stone. Ctx. 3419.05 is another rounded fire-cracked river rock that may have served as a cooking stone. Ctx. 3419.06 is greenstone debitage.

When this site was observed in the fall, the vegetation consisted of blue oak and buckeye trees, monkey flower, thistle, fern, and poison oak. Fall is harvesting time for acorns and buckeye nuts, and once processed these starchy food sources would be stored for six months to one year. Although there is no ethnographic data that the Hill Nisenans consumed blue oak acorns, they did indeed harvest buckeye nuts. Buckeye nuts are leached using the same technique as acorns, although they must be leached longer to remove all the poisonous bitter prussic acid (Riddell 1978:374).

**Analysis**

When comparing these two rock shelters, they are similar in the fact that they have BRM features surrounding them and one or more inside them. Rock Shelter 1 has one milling feature inside dividing the two rooms and seven surrounding the shelter. Rock Shelter 2 has five milling features within the shelter, 14 milling cups, and four milling slicks surrounding the shelter. Based on the quantity of BRM features and the dimensions of the shelters, I can posit that Rock Shelter 2 was inhabited by a larger population (Figure 6). With a larger population, the inhabitants would need more milling surfaces and tools to process an adequate amount of food. Both shelters had milling features inside them, which may signify the season of use. I believe these shelters were occupied during the rainy cold season, late fall to early spring. The rock shelters in the hills would be more advantageous in winter and spring when the valley would occasionally flood.

Both Rock Shelter 1 and Rock Shelter 2 have cultural material within them, including possible pestles, cooking stones, and flaked tools (see Figure 5). The presence of an inside BRM feature goes hand in hand with the observation of stone tools within them. Otherwise, it would be like having mixing bowls without any household tool to mix or stir with. These tools within the shelters also speak to the seasonality of use. The greenstone tools would have been used for cutting and chopping of flora and fauna hunted or gathered by the Nisenans. Rock Shelter 2 is the only one where a fire-cracked rock was observed. For future research on these two rock shelters, we could also test the stone tools for starch residue to see if it aligns with the starches in the BRM features. No dating has been done for either site; further research with dating techniques would be beneficial for a deeper understanding of the sites.

Rock Shelter 1 is the only one that has more than one distinct chamber. Why would the occupants need more than one distinct chamber? I consider these separate chambers to be different rooms. The secondary room could be for a newlywed couple or an elderly family member. The Nisenan are a patrilocal community. The men must first prove his worth to the female’s family. The man would live with the female’s family for at least six months. During this time he would hunt and fish to prove he could be a good provider. If the female’s family approved of the male’s hunting and fishing skill, the newlywed couple would move back to the man’s home village (Wilson and Towne 1978:389).

**STARCH GRAIN METHODS/ANALYSIS**

Plants store more starch than any other food source. Starch is stored in seeds, roots, and tubers, as well as other fleshy structures (Pearsall 2000:178). Thus, starch grain analysis is an ever-growing subfield
within archaeology. In this research, the data retrieved from starch residue analysis from BRM features at each site can provide direct data on site use and for comparative analysis of the two rock shelters. Field collection methods used for retrieval of the starches from the BRM features at the two shelters sites are outlined by Wisely (2017). To obtain the starch sample from the milling features, we used distilled water, a sonic toothbrush, pipettes, test tubes, and plastic non-starch gloves. First clean out the milling surface as much as possible and then pour the distilled water into the BRM feature. Sonicate with a new toothbrush head for 10 minutes. Make sure you submerge your toothbrush head fully. While sonicating, make sure to brush all grinding surfaces and cracks of the milling feature. The purpose of wearing gloves is to reduce the potential for contamination.

To begin collecting the sample, place the pipette at the bottom of the sample. Collect from the bottom of the sample first since that is where the majority of the starch sample will be located. Once you have collected most of the sample from the bottom, you can pour some of the water along the side to collect any residual starches. You will lose some of the water to absorption to the rock, just pipette as much out as possible. Label the tubes with the samples’ corresponding provenience information. During the field sampling, two BRM features were sampled from Rock Shelter 1 and three from Rock Shelter 2. Then the samples go to the lab for further processing and identification. The lab processing of this data was conducted by Far Western Anthropological Research Group, under the supervision of Justin Wisely.

The starch grain results from the BRM features, Ctx. 3316.02 and Ctx 3317.01, located at Rock Shelter 1, had positive results. From Ctx. 3316.02, four starch grains were retrieved. Two were identified as starches from the seeds of *Juncus* spp. (Figures 7, 8, and 9), while the other two were unidentifiable. From Ctx. 3317.01, 33-plus starch grains were retrieved. One was identified as starch from *Juncus* spp., 30-plus were identified as *Quercus* spp., and the final two were unidentifiable. Samples from Rock Shelter 2 were inconclusive. One sample was contaminated in the lab with a sample from another site and had no identifiable starch grains, and a second sample was lost in transit to the lab.

What can the presence of *Juncus* spp. tell us about Rock Shelter 1? The Juncaceae family (rush) is a perennial wetland plant. Rushes are bunch grasses that are widespread throughout temperate regions (Stevens et al. 2012:1). What was *Juncus* spp. used for by the Maidu, and specifically the Nisenan? These wild bunch grasses were used throughout California for multifarious functions. The use of *Juncus* prevailed in southern California and Mexico basketry. The stems and roots of the rush grasses were used by the Cahuilla, Chumash, and Death Valley Shoshone (Stevens et al. 2012:1). Dye could be obtained for basketry patterns from *Juncus mexicanus*. Like other Californian tribes, the Nisenan consumed all parts of the rush plant from roots to seeds. The young shoots of *Juncus balticus*, *Juncus arcticus*, and *Juncus* spp. were eaten raw, roasted in ashes, and the leaves cooked. The Maidu used rushes that are not in the *Juncus* family. They commonly used *Scirpus lacustris* and *Typha latifolia* to weave mats. The mats were used as seats, beds, camp and roofing material, and doors (Kroeber 1976:415).

The Nisenan also commonly used rushes for material purposes. *Juncus luzula* (wiregrass) was woven into women’s aprons along with tule, as well as shredded maple or willow bark (Wilson and Towne 1978:390). Wiregrass was also used to make dolls and diapers for the children of the Nisenan. *Juncus* was woven into breechcloth and utilized as a routine binding material. Acorns are a widely known food staple for Native Americans. The nut meat is the single most utilized starchy food consumed by the Nisenan. The starch grain recovered from Rock Shelter 1 cannot be further diagnosed to a specific varietal of oak. Although blue oak is present at the site, there is no ethnographic data stating that the Hill Nisenan consumed this varietal. The Nisenans would still travel to their most desirable oak varietal first. They start harvesting acorns in the fall to store for year-round use (Simpson 1977:57).

**CONCLUSION**

Based on the environmental and spatial description of the three Maidu linguistic stock, Saddleback Ranch was inhabited by the Nisenan tribe. The study of starch remains from both rock shelters has provided
insight into the subsistence practices of the Nisenan. It is possible the shelters were used in the wet cold season, and that acorns and rush seeds were consumed.

Rock Shelter 1 (SBR-0317-11) has two separate living spaces divided by a milling feature, as well as a deliberately cleared area in front of the shelter that resembles a patio. I hypothesize that this shelter is for a larger extended family unit. This is based on the assumption that more space is needed to accommodate a larger family. The second room could be for a newlywed couple who is living with the woman’s family unit until they move back to the man’s village more permanently. Rock Shelter 1 and Rock Shelter 2 are on the same elevation concourse, which leads me to believe both shelters are a part of a small Nisenan settlement. The Hill Nisenan lived in small group clusters partially up the mountainside on knolls, terraces, and ridges, which is similar to the pattern of these shelters (Kroeber 1925; Riddell 1978; Wilson and Towne 1978).
The purpose of this article is to compare and contrast the two rock shelters. In this research, I use the data retrieved from starch residue analysis from the BRM features at each site to provide direct insight into the similarities and differences between the two shelters. The starch residue results from only Rock Shelter 1 has provided evidence of starch material being processed. But what does that lack of starch residue tell us about a milling feature? I do not think it reveals that the feature was not being used, but rather it indicates that the milling feature may have been used for the processing of non-starchy or low starch materials. Starches also do not always survive, which may also explain their absence in a sample.

From Rock Shelter 1, starch grains of *Juncus* spp. (rush) and *Quercus* spp. (oak) were identified. *Quercus* spp. is a widely known staple of many Native American tribes. Oak tree acorns are the primary starch food source for the Nisenan. Based on ethnographic research, the Juncaceae family was used for many functions by California Native Americans. A few resources only speak of rushes, or wild grasses, but do not specify the species, although rush is a generic term for bunch grasses unless also referring to its scientific name. The Nisenan used rush *Juncus* for sustenance, medicine, to make dye, and as material for breechcloths. The starch residue obtained from the milling feature was from the seeds of the *Juncus* plant. The combination of milling feature and ethnographic data indicate that *Juncus* was processed by the Nisenan who inhabited Rock Shelter 1. Since the starch residues came from seeds, the Nisenan likely ground the seeds for pinole.

Since the samples from Rock Shelter 2 are inconclusive, I suggest phytolith analysis be conducted alongside further starch residue analysis, since we did not process all the BRM features at the site. These two lab processing techniques can be done with the same samples without deteriorating the plant material for either. This combination would allow a more in-depth conclusion about the foods and materials being processed. This research is significant because it expands our knowledge about the Nisenan and their paleo diet. Once you stop to take the time to look at the landscape as your grocery store and pantry, your perspective changes. You begin to realize that the rolling hills and meadows are full of edible plants. It is clear that the Native Americans had an endless quantity of plant-based resources all around them, ready to be picked.

**ACKNOWLEDGEMENTS**

Special thanks to Justin Wisely for showing me the ropes in the world of starch residue analysis. I would like to acknowledge and thank Justin Wisely, Mark Selverston, and David Price for collecting the starch samples with me. Thank you to Whitney McClellan, Mark Selverston, Sandra Konzak, and Dana Shew for editing this research in its many formats. Cheers.

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