

Cupule Petroglyphs as Elements of the Cultural Landscape

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Cultural landscapes include places where California Indians have interacted with the supernatural aspects of their world. These places can be landmark rocks with power that had to be maintained and managed. The rocks may have unusual shapes, or they may have been modified by incising, carving, or grinding; for example, they may have been ground or drilled to create cupule petroglyphs. One criterion probably used by prehistoric people in selecting a residential location would have been the proximity of rocks with power, which were sometimes enhanced or accessed with cupules. Ethnographic and archaeological data suggest that cupules were an accessible way for people to contact the supernatural as part of their everyday existence.

The spiritual aspects of existence are inextricably connected to the mundane places of daily activity in traditional cultures; this is reflected in the use and modification of the physical environment, or landscape. For the hunter-gatherers of California, the cultural landscape included settlements, places where plants were gathered, hunting areas, and locations of spiritual significance and power. Ethnographic research in Baja California conducted recently by Gamble and Wilken-Robertson (2008) highlighted the range of activities and locations present in a cultural landscape, including spiritually significant and powerful areas. Spiritually significant areas, also referred to here as sacred places, are places where power is concentrated (Bean 1976:415). Power “is a spiritual energy or life force that enables an individual to interact with the forces of the natural and supernatural worlds” (Carmichael 1994:89). Power — its conception, acquisition, and use — was important to all California Indians (Bean 1976:411–413), and the power in sacred places had to be maintained and managed (Hyder and Lee 1994:3). This paper explores the ethnographic evidence (mostly from southern California) for the role played by cupule petroglyphs — as managed sources of power — in connecting people in Native American

communities with the sacred or supernatural aspects of their world.

It is not my intention to provide an exhaustive catalog of the archaeological occurrence of cupules, and the focus in this paper is on southern California. Parkman (1986) has discussed the occurrence of cupules at 76 sites in the Diablo Range, located in central California east of San Francisco and Monterey. He cited extensive research on the Pomo in his discussion of the possible function of cupules, using ethnographic information and archaeological observations. Among the Pomo, women who wanted to become pregnant would visit certain rocks that represented mythological figures that had turned to stone, as well as natural rocks shaped like babies. Pomo women would cut a groove into the rock with a flint knife, or grind some rock dust from a cupule and eat or apply it to themselves (Barrett 1952:385–87; Bibby 2004:11–13; Gifford and Kroeber 1939:186; Hedges 1983; Heizer 1953; Loeb 1926:247; McGowan 1982:14; Ritter and Ritter 1976:175–176). Jones (2004), in a recent master’s thesis, has provided an excellent overview and discussion along these lines. The San Diego County sites mentioned in this paper relate to points made about the position of cupules within the larger cultural landscape, and do not comprise part of an inventory of cupule sites in the region.

THE IMPORTANCE AND POWER OF ROCKS IN THE CULTURAL LANDSCAPE

Many of humanity’s most sacred places consist of landmark rocks or stones (Taçon 1999:36–42). Special rocks have been cherished by all cultures; Britain, for example, contains many standing stones that are associated with powerful supernatural beings and mythic events that are well established in folk traditions and folklore (Corio and Corio 2003). George Washington’s mother often visited a “meditation rock” to pray for the safety of her son and for the success of the American Revolution (Bailey 2007:18). For California Indians, rocks were often (but not always) modified to represent their powerful aspect; Heizer (1953) has noted that venerated stones were located in certain areas of Tolowa, Karok, and Hupa territory, and that pits and grooves were made in other stones by the Pomo for fertility and weather control.

At petroglyph and pictograph locations within the cultural landscape of California Indians, the rock itself is often part of the sacred quality of the place, and unmodified rocks may have cultural significance as well. Gamble and Wilken-Robertson (2008:140–41) have documented sacred places within the cultural landscape of the Kumeyaay of Baja California that included mountains and unmodified rocks. Theodoratus and LaPena (1994:22–23) have described sacred topographical features, including mountains, rock outcrops, caves, and pools, that have spiritual importance to the Wintu; the rocks may have distinctive shapes. Ethnographic interviews with Yokuts individuals carried out by Weinberger (1982:73–75) provided numerous references to unmodified rock formations that had associated stories with cultural significance. Many of these were cone-shaped or vertical boulders that represented people or baskets, some of which had cupules ground or drilled into them. Each had a story, such as the one collected by Latta (1936:5) about a cone-shaped rock marking the place where a woman rested on a hill top; when she put down her basket it turned to stone. Weinberger referred to such petroglyph locations as “mythologically significant rock formations” (1982:75). In the 1930s, Zigmond documented a location in Red Rock Canyon where contemporary Kawaiisu recognized a natural rock formation as being the bones of a giant, man-eating bird (Zigmond 1986:407).

The Luiseño of northern San Diego County assigned *ayelkwi* (power) to boulders and outcrops with shapes like animals, plants, humans, and spirits (White 1976:368). True and Waugh (1986) described a “power cave” consisting of an unmodified crack in some boulders where young men could go to seek power; the Luiseño believed that the crack led into the mountains. In their discussion of their interviews with Luiseño people about the cave, called *To-vah*, True and Waugh cited other culturally significant, unmodified outcrops in Luiseño territory (1986:269).

In southern San Diego County, examples of unmodified, culturally significant rocks and outcrops have been identified by the Kwaaymii in their Laguna Mountain territory. The Kwaaymii are a sub-group of the southern California Indian group generally referred to as the Kumeyaay (Cline 1984:i). They are part of the Yuman linguistic family, and have their own dialect. The Lucas

family has provided extensive ethnographic information on this region of San Diego County. Thomas Lucas, for example, has identified the Guardian of the Trail, which is a prominent outcrop representing an old woman wearing a shawl and looking over the path taken by the Kwaaymii as they travel to the desert from their mountain village (Cline 1984:19–20). Toad Rock is an outcrop in the Kwaaymii home village that has an important creation legend associated with it. In the story, at the beginning of time the people had no water; a shaman then sacrificed a toad, which resulted in an earthquake that caused water to flow. Toad Rock is that toad (Lucas n.d.). As noted by True and Waugh (1986:272), unmodified, culturally important features would not normally be identified during an archaeological survey. It is my belief that these types of cultural feature are poorly represented in the archaeological record, and that much more attention should be given to them. Careful observations might be combined with ethnographic research and interviews with contemporary California Indians to help identify such features.

There are numerous accounts of California Indian shamans entering the supernatural through cracks or “doors” in the rock; the rock embodies the spirit world and the spirits that inhabit it (Whitley 2000:82–83). Gayton (1948:113) mentioned a Yokuts shaman who was believed to enter his sacred area in the rock through a crack; the shaman stored religious and ceremonial items there. These places were usually marked with pictographs, and the average person was generally not welcome near where the shaman’s cache of ceremonial objects was located (Whitley 2000:82–83). The Kawaiisu believe that the Rock Baby is a supernatural being who lives inside rocks and is responsible for painting them (Zigmond 1977:71). The Rock Baby¹ was regarded as a dangerous (that is, powerful) being.

Some pictograph and petroglyph sites were “power spots, where individuals, usually shamans [religious leaders] conducted ritual activity in order to draw upon supernatural power which was believed to be concentrated in certain individuals, objects, and places in the cosmos” (Hedges and Hamann 1999:10). Hedges (1992:71) noted that shamanistic activities could be conducted by non-shamans, such as young men seeking a guardian spirit. The initiate entered his vision through the rock painting (Hedges 1992:81). Other pictograph sites,

however, were associated with puberty rites. Luiseño women went through elaborate ceremonies marking their entry into adulthood. At the conclusion of the ceremonies, the young women raced to a specific rock located away from the village. They were given red paint that was used to create certain designs on the rock. Linked diamonds, daubed finger and handprints, and simple marks are found as a result (Smith and Freers 1994:19–22).

According to Whitley, these two different types of activities associated with pictographs can be defined as involving either the Spirit Helper complex or the Vision Quest complex (Whitley 2000). During puberty ceremonies, young men and women may enter an altered state of consciousness, in which they gain access to the supernatural. A Spirit Helper may be encountered who will guide them throughout their lives. These puberty ceremonies are public, and the results are meant to be seen by the entire village. In contrast, the activities of the shaman during his Vision Quest are secret. The shaman prepares himself to gain access to power and the supernatural, and expresses his actions and experiences by painting or pecking on rocks. Paintings by shamans are usually located away from the village, perhaps in rock shelters or other hidden places. The meaning of the paintings can only be known to the informed individuals themselves (Whitley 2000:82–83).

Cups or pits ground or pecked into rocks (cupules) are found all over the world, in many different cultures, and are associated with different periods of time (Hedges 1980a:C-1). In some cases, there is direct ethnographic information on the manufacture and use of cupules. Among contemporary native peoples in Australia, for example, natural and human-made pits in rocks are associated with the sacred, and natural pits in rocks may mark the entry and exit locations of spirit beings (Hampton and Harney 2000:8). Heizer (1953) has provided ethnographic examples of cupule use for fertility among the Pomo, and for weather control among the Tolowa, Karok, and Hupa. In southern California, their identification and function is not always well understood; one challenge is that there are limited references to them in the ethnographic literature of western North America (True and Baumhoff 1981:264).

In contrast to rock paintings and petroglyphs, cupules have not received much attention, probably

because they can be difficult to identify, are easy to miss under certain lighting, and because of a notable lack of ethnographic information about their function. They are often confused with other types of cultural features, or are missed during site recordation. However, there is ethnographic evidence that cupule manufacturing and use was (and is) an important way to contact the sacred and the supernatural—and one that was accessible to the ordinary person.

Definition of Cupules

A cupule petroglyph can be defined as a “non-utilitarian... cultural mark that has been pecked or pounded into a rock surface” (van Hoek 2007:108). In contrast to small mortars or anvils, cupule petroglyphs can occur on vertical rock faces, and are often clustered or patterned in dense accumulations. Small, cupped depressions or pits may be found adjacent to milling surfaces, particularly mortars. In these cases, the pits may be acorn anvils that were used to crack the acorn hull prior to grinding the interior nut meat in the mortar. Anvils are also found on portable slabs. It has also been suggested that the small pits, when they bear evidence of grinding wear, were used to prepare herbs or pigments, although Hedges (1980a:C-17) noted that no evidence for this use has been identified.

Hedges examined the relationship between pits and milling features at Santa Ysabel and Cuyapaipe reservations in San Diego County (Hedges 1980a; Taylor and Carrico 1981:105–107). He noted that while cupules occur on boulders that have milling features, not all boulders with milling features had cupules. The cupules were located only on particular boulders at a site; Hedges noted that if the pits were used for food preparation as part of the milling process, their presence would be distributed throughout the site (Hedges 1980a:C-17). In McCain Valley, in eastern San Diego County, Hedges observed cupules in a variety of settings: with rock paintings, with different types of milling elements, and isolated—and on the horizontal and vertical faces of boulders (Hedges 1980b:175).

Cupules have been associated with incised grooves in the Pomo culture area, where soft stone is worked as part of a fertility ritual (Hedges 1983). However, the presence of grooves with cupules is considered rare in southern California (Minor 1975). In San Diego County,

grooves tend to be carved rather than incised, and are not commonly found with cupules; exceptions are a site (SDI-14108) in Arkansas Canyon (Hector 2005), and a site (SDI-16956) in Wynola found by Kwaaymii elder Carmen Lucas after the 2003 Cedar Fire (Leach-Palm 2004). The site in Wynola has grooves carved into the ridgeline of the rock in such a way that the edge appears cogged. The World View site (SDI-9040), in Cuyamaca Rancho State Park, consists of a soapstone boulder with incised cupules and grooves. Parkman (1981:183) noted that the boulder markings and location were unique for the Kumeyaay culture area.

Cupule Associations in Southern California

A search of the ethnographic literature (with a concentration on southern California) provided some information about cupule functions; these data are summarized in Table 1. The observation that the functions

and purposes associated with cupules are related to people's normal concerns with day-to-day matters is notable. As stated earlier, I have focused on the southern part of the state; for northern California, the interested reader should consult Jones (2004) and Parkman (1986).

In southern California, cupules typically occur at occupation sites that contain Late Prehistoric (post-A.D. 500) artifacts (Hedges 1981; Minor 1975; Whitley 2000). Milling features (mortars, basins, and slicks) commonly occur in association with cupules. Cupules can also be found in association with pictographs in rock shelters; in fact, some cupules retain evidence of pigments, and were painted. Yokuts cupule petroglyphs at some sites were painted as well (Weinberger 1982:72). Whitley (2000:82) has described cupules that were painted red and outlined in white; these were preserved in a rock shelter that also had pictographs. Sometimes they had grooves or incising between them or linking them. Cupules can be

Table 1

ETHNOGRAPHIC REFERENCES TO CUPULES IN SOUTHERN CALIFORNIA

Description of Purpose	Description of Purpose	Group	Detail
Trail or territory markers	DuBois 1908:115	Lui-seño	When the original ancestral people of Temecula settled the land they scooped out a rock to show that the land was theirs.
	Patencio 1943:98	Cahuilla	Pecked rocks were trail markers; different size holes were made.
	Mark Mojado, San Luis Rey Band of Mission Indians, personal communication	Lui-seño	A pecked rock above the village of Temeku provides a map of the entire Temecula Valley.
Fertility	Sampson 1999; Smith et al. 1990:11	Kawaiisu	A boulder that looked like a pregnant woman lying down has cupules in it. A woman who is having trouble conceiving grinds into the figure and consumes the dust from the rock.
	Whitley 2000: 98–100	California Indians	Women who wished to conceive would consume rock dust from cupules.
Power access	Smith and Lerch 1984; Smith et al. 1990:11	Cahuilla, southern California region	Rocks have great power and can move from place to place; they can give this power to people who know how to release it. The manufacture of cupules releases this power.
Death tally	Fritz et al. 1977:16	Lui-seño	A cupule was made for each person in the clan who died.
Puberty ceremonies	Hedges 1981; Minor 1975:16; Whitley 2006:312	Lui-seño Yokuts	Stones with cupules were struck to produce a ringing sound. Dubois (1908:92, 95, 121) stated that ringing rocks were used in puberty ceremonies. The pecked pits were made to count the number of males and females initiated. For the Yokuts, female puberty initiates ground briefly in the cupules with a ritual pestle to symbolize the importance of food processing and to connect her to those who went before her.
Tool sharpeners	Hill and Nolasquez 1973:98; White 1963:125, 186	Cupeño, Lui-seño	Pitted boulders were used for sharpening wood and bone arrow points; these were shared by the community (called <i>lawalawax</i> in Lui-seño).
Ringing stone	Dubois 1908:92, 95, 121; Hedges 1981	Lui-seño	Stones with cupules were struck to produce a ringing tone. Dubois stated that ringing rocks were used in puberty ceremonies.



Figure 1. SDI-12923 Cupules

patterned, possibly to represent constellations or other astronomical phenomena. Archaeologists have suggested that patterned pits were made to follow the sun's apparent movement in the sky and to allow southern California Indians to identify the solstice or seasons (Brown 1999; Trupe et al. 1988). Cupules may also be associated with ringing rocks, which are unusual rocks that make a bell tone when struck (Hedges 1981:13).

It has been hypothesized that cupules were associated with fertility ceremonies (Hedges 1981:14). As mentioned above, grooves are rare in southern California, although two sites in the vicinity of Julian (San Diego County) have both cupules and grooves (Hector 2005:40; Leach-Palm 2004:15). Grooves were associated with fertility in the Pomo culture area (Hedges 1983). Women who wished to conceive would consume rock dust from cupules, or the cupules were ground by young women during puberty ceremonies (Whitley 2000:98–100). Cupules may have had different functions in different contexts, and their location may have been important in defining their function (Smith and Lerch 1984).

While several of the archaeological sites on Volcan Mountain (San Diego County) contain cupules (Hector 2005:27–28), SDI-12923 contains the elements that illustrate the accessibility to the sacred that this form of petroglyph provided to the average person. The cupule petroglyph elements are located on two prominent vertical boulders within the site, and are adjacent to

ground-level rocks that contain milling surfaces (Figure 1). One rock is a large stone approximately 1.5 meters in height, with a level top and steep, vertical sides. Cupules are located along the northern edge and face of the rock. They are uniform in size and depth. The second rock with cupules is a free-standing, narrow stone of about the same height. This unusual rock is shaped like a tall, narrow pyramid. One cupule has been ground into the top of the rock. It is quite deep (10 cm.), and is smooth from grinding all the way to the bottom. The other cupules on this boulder are more uniform in size, and resemble those on the first rock. Although limited ethnographic information exists about the function of cupules, Table 1 shows that most

known uses were available to anyone who wished to contact the supernatural directly. Many of the uses were related to secular interests such as fertility; few involve a restricted or shamanic function. This conclusion is supported by the fact that most cupule petroglyphs (e.g., SDI-12923 and many other examples) are found within village or camp locations. When they are not, they are generally associated with pictographs or other kinds of petroglyphs in another part of the cultural landscape.

At SDI-2524 in Anza-Borrego Desert State Park, the cupules occur in patterns on vertical surfaces, and on the edges of rocks that contain milling features (Figure 2). This is a common pattern, and one also seen at McCain Valley, at a historic village in Santa Ysabel (SDI-16462), and at the ethnographic village of *Cuyamaca* (SDI-9538). At the Arrowmakers Ridge site, thought to be the ethnographic village of *Japacha* (SDI-913), a rock covered with cupules sits at the edge of the habitation area. The shape and color of the rock differ from those of other boulders at the site. On Palomar Mountain in northern San Diego County, cupules are located within the ethnographic village of *Pakuka* (SDI-217). They are on a prominent, separate rock adjacent to milling features; there are two large mortars in the cupule rock.

Weinberger (1992:27) also noted that it was a characteristic of Tulare County foothill sites for cupules to be associated with large milling complexes, and

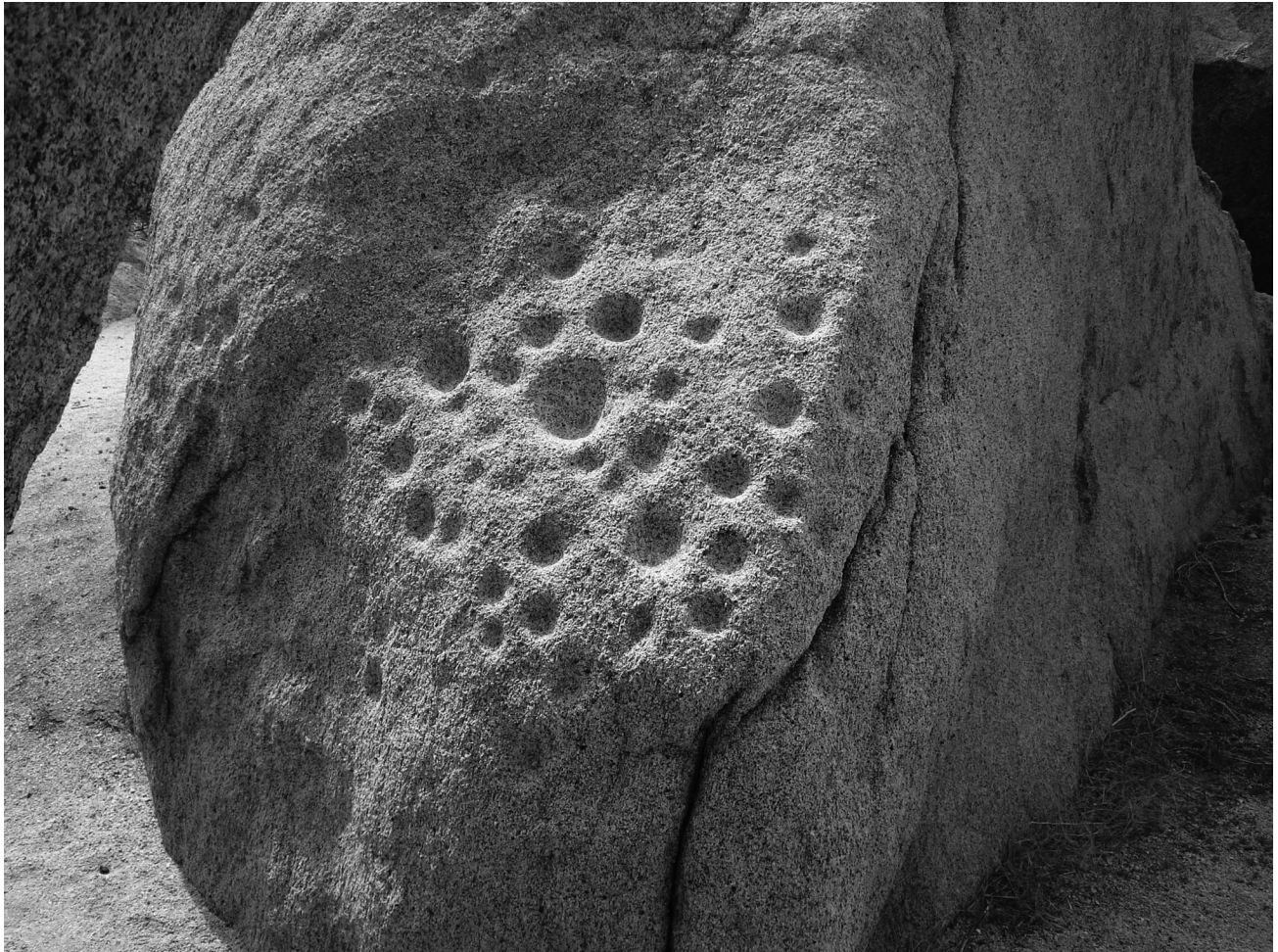


Figure 2. Cupules at SDI-2524

that these cupules were often located on distinctively shaped rocks. Gorden (1990) and others have noted that cupules and pitted boulders within milling complexes link the sacred with the profane or mundane. However, as Jones (2004:44) has pointed out, the milling surfaces and cupules may not be contemporaneous, and we run the risk of making a false association between the two. Although the cupule rocks in my examples may predate the ethnographic villages, the co-occurrence of cupules with these villages, at least in the Cuyamaca and Palomar mountains, seems more than a coincidence.

One area where cupules are still part of the living cultural landscape is in the Exeter area of Tulare County. In 2008, an extensive survey and Phase 1 evaluation program was undertaken in upper Yokohl Valley located near Exeter (Hector et al. 2009). Based on ethnographic interviews I conducted during the summer of 2008, this

location continues to be important to Yokuts Indian people, and is an integral part of an ongoing cultural tradition. The Yokuts continue a tradition of women's use of these features at Exeter Rocky Hill, located adjacent to Yokohl Valley. The cupules here are located within a dense concentration of pictographs. Many of the cupules are painted. As a result of the 2008 study, a landmark rock was identified at TUL-803, and I recorded drilled cupules on one side of a vertical rock located near an occupation area containing milling features (Hector et al. 2009:51). I showed this rock and the cupules to a group of Yokuts during a field trip in 2008, and the women indicated that the feature was important to them by singing. A photograph of a similar boulder is reproduced in Latta (1936:65); the Koyote Yokuts told him that this was where a woman had put her basket down and rested, and it had then turned to stone.

It is interesting to note that the two occupation locations with extensive midden deposits recorded during the study in upper Yokohl Valley, TUL-803 and TUL-804, feature pictographs on prominent vertical rock faces. Site TUL-803 has pictograph panels that are physically separated from the occupation and cupule area by a low ridge. The main pictograph panel is on a large, vertical rock face, and there is a cleft or crack behind the panel large enough to enter. In this case, a person could literally enter the paintings. At TUL-804, the pictograph panels are adjacent to a small area of midden and milling features, but are physically separated from house pits by a ridge. Both sites have cupules located on the same boulders as milling elements, but only TUL-803 has a vertical landmark rock with cupules. One of these sites, TUL-804, was evaluated as part of the Phase 1 project.

In the Phase 1 project area, 22 prehistoric sites were evaluated; they contained 190 milling features with 497 individual milling surfaces (Hector et al. 2009). Only two of these features had cupules; in both cases, seven cupules were on one boulder. None of the other 188 boulders with milling surfaces had cupules. One of the boulders with cupules is located at TUL-804, as discussed above. The other boulder is at TUL-776, which had a small amount of debitage on its surface (TUL-803 was outside of the Phase 1 project area and milling at that site was not mapped in detail). The other milling locations in similar topographic and environmental settings in the valley lacked midden deposits or artifacts.

Vertical cupule boulders are similar in form to the “wave rocks” found in western Riverside County, which also contain cupules. Workman (2003) described vertical rocks at RIV-333, for example, that feature natural, human-made, and enhanced pits under the crest of the rock. These features correspond to important, unmodified rock formations that are part of the cultural landscape, as noted by Weinberger and described earlier. Frequently these formations have natural pits, cavities, or wind pockets. The role of these openings in southern California traditional cultures is not known, but they may have enhanced the sacred qualities of the rock (Trupe et al. 1988:153). At Painted Cave, in San Marcos Pass, Santa Barbara County, natural wind pockets frame the cave in which spectacular Chumash pictographs are located.

CONCLUSIONS

The cultural landscape contains places of power that are used and maintained by people who live in that environment. Cupule petroglyphs provided less restricted access to the supernatural power that was located within certain rocks in the cultural landscape. The ethnographic examples in this paper support the proposition that cupules provided broad access to the sacred or supernatural. Furthermore, I propose that one of the criteria for selecting a living area may have been the presence of power locations, which were sometimes enhanced or accessed with cupules. The distribution of archaeological sites on Volcan Mountain in San Diego County and at sites in upper Yokohl Valley in Tulare County appears to provide excellent support for this proposition. There are many locations in these two areas that seem to meet all of the usually accepted criteria for habitation areas, but lack any evidence of use or occupation. Perhaps locations such as SDI-12923 or TUL-803 had power access points that the unoccupied places did not. This hypothesis implies that knowledge of the powerful places in the cultural landscape informed and guided settlement selection. The presence of cupules on prominent rock formations and at sites such as those found in San Diego’s mountains and in other areas of southern California supports the argument.

NOTES

¹The term “baby” in these native traditions does not refer to an actual infant, but rather to a subnormally-sized human-like creature; beliefs concerning such small magical/malevolent creatures are common to many cultures—e.g., leprechauns.

REFERENCES

- Bailey, Diana L.
2007 *American Treasure: The Enduring Spirit of the DAR*. Virginia Beach, Virginia: The Donning Company Publishers.
- Barrett, S. A.
1952 Material Aspects of Pomo Culture. *Bulletin of the Public Museum of the City of Milwaukee* 20(1):1–260. Milwaukee.
- Bean, Lowell John
1976 Power and Its Application in Native California. In *Native Californians: A Theoretical Retrospective*, Lowell John Bean and Thomas C. Blackburn, eds., pp. 407–420. Menlo Park: Ballena Press.

- Bibby, Brian
2004 *Precious Cargo: California Indian Cradle Baskets and Childbirth Traditions*. Berkeley: Heyday Books.
- Brown, David C., Jr.
1999 A Suspected Sunwatching Station in Cahuilla Territory of Southern California. *Rock Art Papers* 14:41–51. San Diego Museum of Man.
- Carmichael, David
1994 Places of Power: Mescalero Apache Sacred Sites and Sensitive Areas. In *Sacred Sites, Sacred Places*, David L. Carmichael, Jane Hubert, Brian Reeves, and Audhild Schanche, eds., pp. 89–98. London and New York: Routledge.
- Cline, Lora L.
1984 *Just Before Sunset*. Jacumba: J and L Enterprises.
- Corio, David, and Lai Ngan Corio
2003 *Megaliths*. London: Jonathan Cape.
- DuBois, Constance Goddard
1908 The Religion of the Luiseño Indians of Southern California. *University of California Publications in American Archaeology and Ethnology* 8(3):69–186. Berkeley.
- Fritz, Ken, Lavinia Knight, and Jane Gothold
1977 The Williams Ranch Sites, San Diego County. *Pacific Coast Archaeological Society Quarterly* 13(4):1–52.
- Gamble, Lynn H., and Michael Wilken-Robertson
2008 Kumeyaay Cultural Landscapes of Baja California's Tijuana River Watershed. *Journal of California and Great Basin Anthropology* 28(2):127–151.
- Gayton, A. H.
1948 Yokuts and Western Mono Ethnography I: Tulare Lake, Southern Valley, and Central Foothills Yokuts. *University of California Anthropological Records* 10:1. Berkeley.
- Gifford, E. W., and A. L. Kroeber
1939 Culture Element Distributions: IV Pomo. *University of California Publications in American Archaeology and Ethnology* 37(4):117–254.
- Gorden, Mary
1990 Cupule Petroglyphs in Tulare County, California. *American Indian Rock Art* 16: 227–235.
- Hampton, O. Winston, and Bill Harney
2000 Mixed Media Dimensions of Dreamtime Painting, Abraded Grooves, and Sacred Rock in the Northern Territory, Australia. *Rock Art Papers* 15:1–15. San Diego Museum of Man.
- Hector, Susan M.
2005 *The Archaeology of Volcan Mountain, San Diego County, California*. Report prepared for the California Department of Forestry and Fire Protection, Sacramento, Calif. On file at ASM Affiliates, Inc., Carlsbad, Calif.
- Hector, Susan M., Arleen Garcia-Herbst, and Linda Akyuz
2009 *Inventory and Evaluation of the Archaeological and Historical Resources of Yokohl Ranch, Tulare County, California*. Report on file at ASM Affiliates, Inc., Carlsbad, Calif.
- Hedges, Ken
1980a Appendix C: Cupule Sites in San Diego County, California. In *Final Report: Archaeological Reconnaissance of a Portion of Santa Ysabel Indian Reservation, Santa Ysabel, California*, V.F. Taylor and Richard L. Carrico, eds. Report on file at South Coastal Information Center, San Diego State University.
1980b Rock Art in the McCain Valley Study Area. In *The Archaeology and History of the McCain Valley Study Area, Eastern San Diego County, California*, John R. Cook and Scott G. Fulmer, eds., pp. 158–176. Riverside: Bureau of Land Management.
1981 Cupule Sites in San Diego County, California. Paper presented at the Southwestern Anthropological Association Annual Meetings, Santa Barbara.
1983 A Re-Examination of Pomo Baby Rocks. *American Indian Rock Art* IX:10–21.
1992 Shamanistic Aspects of California Rock Art. In *California Indian Shamanism*, Lowell John Bean, ed., pp. 67–88. Menlo Park: Ballena Press.
- Hedges, Ken, and Diane Hamann
1999 *Rock Art on the Santa Margarita River: Recording the Pictographs at CA-SDI-9824*. Manuscript on file at Camp Pendleton, California.
- Heizer, Robert F.
1953 Sacred Rain-Rocks of Northern California. *University of California Archaeological Survey Reports* 20: 33–38.
- Hill, Jane H., and Rosinda Nolasquez
1973 *Mulu'wetam: The First People*. Banning, California: Malki Museum Press.
- Hyder, William D., and Georgia Lee
1994 *The Shamanic Tradition in Chumash Rock Art*. Manuscript on file at the California Department of Parks and Recreation Southern Service Center, San Diego.
- Jones, E. Timothy
2004 *Petroglyphs in Context: Ritual Functions of Cupule Petroglyphs in the Southern North Coast Ranges, California*. Master's thesis, Sonoma State University.
- Latta, Frank F.
1936 *California Indian Folklore*. Exeter, California: Brewster's Historical Press.
- Leach-Palm, Laura
2004 *Fire Damage Assessment and Archaeological Survey Related to the Cedar and Paradise Fires, San Diego County, California*. Report on file at Far Western Archaeological Research Group, Inc., Davis.
- Loeb, Edwin M.
1926 Pomo Folkways. *University of California Publications in American Archaeology and Ethnology* 19(2):147–409.

- Lucas, Carmen
n.d. *Kwaaymii: The Laguna Band of Mission Indians*. San Diego: ASM Planning and Research Collaborative.
- McGowan, Charlotte
1982 Ceremonial Fertility Sites in Southern California. *Museum Papers* 14. San Diego Museum of Man.
- Minor, Rick
1975 The Pit-and-Groove Petroglyph Style in Southern California. *Ethnic Technology Notes* 15. San Diego Museum of Man.
- Parkman, E. Breck
1986 Cupule Petroglyphs in the Diablo Range, California. *Journal of California and Great Basin Anthropology* 8(2):246–259.
- Parkman, E. Brett (ed.)
1981 *A Cultural Resources Inventory and Management Plan for Prescribed Burning at Cuyamaca Rancho State Park, San Diego County, California*, Volume II. Report on file at the California Department of Parks and Recreation, San Diego.
- Patencio, Francisco
1943 *Stories and Legends of the Palm Springs Indians*. Palm Springs: Palm Springs Desert Museum.
- Ritter, Dale W., and Eric W. Ritter
1976 Prehistoric Pictography in North America of Medical Significance. In *Medical Anthropology*, F. X. Grolley, S. J. Harold, and B. Haley, eds., pp. 137–228. The Hague: Mouton.
- Sampson, Michael
1999 Unusual Rock Art Phenomena from Two California Desert Locations. Paper presented at 1999 Rock Art Symposium, San Diego Museum of Man.
- Smith, Gerald A., and Stephen M. Freers
1994 *Fading Images: Indian Pictographs of Western Riverside County*. Riverside: Riverside Museum Press.
- Smith, Gerald A., and Michael K. Lerch
1984 Cupule Petroglyphs in Southern California. *San Bernardino County Museum Association Quarterly* 32(1–2).
- Smith, Gerald A., Michael K. Lerch, and Harley Garbini
1990 *Indian Pit and Groove Petroglyphs of Western Riverside County*. San Jacinto, California: San Jacinto Valley Museum Association and Inland Empire Museum Foundation.
- Taçon, Paul S. C.
1999 Identifying Ancient Sacred Landscapes in Australia: From Physical to Social. In *Archaeologies of Landscape*, Wendy Ashmore and A. Bernard Knapp, eds., pp. 33–57. Malden, Massachusetts: Blackwell Publishers.
- Taylor, Clifford V. F., and Richard L. Carrico
1981 *Final Report: Cuyapaipe Indian Reservation Cultural Resource Inventory*. Report on file at South Coastal Information Center, San Diego State University.
- Theodoratus, Dorothea, and Frank LaPena
1994 Wintu Sacred Geography of Northern California. In *Sacred Sites, Sacred Places*, David L. Carmichael, Jane Hubert, Brian Reeves, and Audhild Schanche, eds., pp. 20–31. London and New York: Routledge.
- True, D. L., and Martin A. Baumhoff
1981 Pitted Rock Petroglyphs in Southern California. *Journal of California and Great Basin Anthropology* 3(2):257–268.
- True, D. L., and Georgie Waugh
1986 To-vah: A Luiseño Power Cave. *Journal of California and Great Basin Anthropology* 8(2):269–273.
- Trupe, Beverley S., John M. Rafter, and Wilson G. Turner
1988 Ring of Pictured Stones: Astronomical Connotations of a Rock Art Site in the Eastern Mojave Desert. In *Visions of the Sky: Archaeological and Ethnographic Studies of California Indian Astronomy*, Robert A. Schiffman, ed., pp. 153–171. *Coyote Press Archives of California Prehistory* 16. Salinas, California: Coyote Press.
- van Hoek, Maarten
2007 Atypical Cupules at Two Rock Art Sites in South-eastern Utah. *American Indian Rock Art* 33:105–116.
- Weinberger, Gay
1982 Four Forms of Yokuts Rock Art from Tulare County, California. *American Indian Rock Art* IX:72–76.
1992 Distinctions in the Archaeological Context of Cupules. *American Indian Rock Art* XV:27–29.
- White, Raymond C.
1963 Luiseño Social Organization. *University of California Publications in American Archaeology and Ethnology* 48:91–194.
1976 Religion and Its Role Among the Luiseño. In *Native Californians: A Theoretical Retrospective*, Lowell John Bean and Thomas C. Blackburn, eds., pp. 355–377. Menlo Park: Ballena Press.
- Whitley, David S.
2000 *The Art of the Shaman—Rock Art of California*. Salt Lake City: University of Utah Press.
2006 Rock Art and Rites of Passage in Far Western North America. In *Talking with the Past*, James D. Keyser, George Poetschat, and Michael W. Taylor, eds., pp. 295–326. Portland, Oregon: The Oregon Archaeological Society Press.
- Workman, James
2003 The Unique Wave-shaped Cupule Boulders of Western Riverside County. *Rock Art Papers* 16:87–99. San Diego Museum of Man.
- Zigmond, Maurice
1977 The Supernatural World of the Kawaiisu. In *Flowers of the Wind*, Thomas C. Blackburn, ed., pp. 59–96. Socorro: Ballena Press.
1986 Kawaiisu. In *Handbook of North American Indians, Volume 11, Great Basin*, W. L. d'Azevedo, ed., pp. 284–307. Washington, D.C.: Smithsonian Institution.