

Native Employment of Mineral Pigments with Special Reference to a Galena Manuport from an Orange County Rock Art Site

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Abstract

This article provides notes on colorants produced from mineral pigments from prehistoric coastal southern California. These mineral pigments include asphaltum, azurite, chromite, cinnabar, fuchsite, galena, hematite, kaolin, limonite, manganese dioxide, and steatite. Special attention is given to a galena manuport recovered from CA-ORA-269, an Orange County rock art site.

Introduction

Prehistoric coastal southern California colorants manufactured from mineral pigments had numerous employments, including pictographic drawing, ground painting, artifact decoration, face painting, and body painting (Hudson and Blackburn 1986, 1987). Ethnographic, ethnohistoric, and archaeological records frequently identify mineral-based colorants in ritual/ceremonial venues such as male and female puberty ceremonies, funerals, sacred dances and feasts, and magical/medicinal practices. Galena was one of the minerals used as a colorant.

This report focuses on a piece of galena found at ORA-269, providing the first published reference of the mineral in an Orange County archaeological study. "One small [3.4 g] piece of fairly pure galena" previously has been noted for the San Pedro Harbor

site, Los Angeles County, in a *PCAS Quarterly* article (Butler 1974:70).

This unique find first will be discussed within the larger context of various pigment minerals known or reasonably suspected to have been used in Orange County's past. Accordingly, an expanded compendium of employments immediately follows this Introduction, and includes special beliefs that attached to the minerals. Next, basic notes on galena, cursory information on ORA-269, and a description of the specimen are provided. Also offered are ethnographic and ethnohistoric observations on local employment of galena, relevant notes on trade, and suggested locations where this manuport may have originated.

Background on Mineral Pigments

The variety of mineral pigments locally used as colorants, and in some cases for other purposes, is substantial. The list includes asphaltum, azurite, possibly chromite, cinnabar, fuchsite, galena, hematite, kaolin, limonite, manganese dioxide, and steatite. We found no definitive reference to support alum stone or copperas as pigment sources, yet based on circumstantial evidence, we do not dismiss the possibility

of such use. Grant (1966:85) reports that the Yokuts made the “finest black” pigment from graphite which they burned, and which they undoubtedly traded to the Chumash (also Lee 1981:25). Graphite was processed by Diegueño to make black paint (Waterman 1910:294, 313). It is possible that burned shales of several colors served as pigments (Singer 1986). Some of these pigment rocks have not been recognized in Orange County archaeological excavations.

Asphaltum

Archaeological, ethnographic, and ethnohistoric evidence attests to prodigious use of asphaltum by the indigenous peoples of coastal mainland southern California and the adjacent islands. From the early Holocene through the middle and late Holocene, this petroleum product was exploited especially for its application as a kind of glue or caulk. It was also employed as a body paint and cosmetic (e.g., Harrington 1934:21; Gutman 1983).

Gabrielino women in mourning placed asphaltum on their foreheads (McCawley 1996:158). Boscana (Harrington 1934:39) stated that elderly Juaneño men participating in raptor killing during the *Pames* ceremony danced around the sacrificed bird “daubed up with black, uglier than the Devil.” This colorant was likely asphaltum, in whole or in part. The women were “stained up with black gum” according to Boscana (Harrington 1934:39). Also looking devilish, according to Boscana, were women who wore a black glue or bitumen as participants at the ceremony of a girl’s first menses (Harrington 1934:21). Boscana (1978:57) reports a glossy brown varnish with which women painted their faces, breasts, and arms, leaving one to wonder whether this colorant was some sort of bitumen derivative. Longinos Martínez (Simpson 1938:44; Simpson 1961:54) mentions “black pitch” for shaping the hair. Perhaps this was tree tar with asphaltum or charcoal added.

Bitumen also was used to paint stones that likely communicated magico-religious symbolism. For instance, one such painted rock was recovered at ORA-378 (Koerper 1995:6-230, 232, 233) and another at the Griset Site (Anon. 1938; Koerper et al. 1996:4, 8). Small, rounded stones decorated with a dark brown paint occur in the uppermost portion of the deposit at LAN-138, the Malaga Cove Site (Walker 1951:65, 67). Walker (1951:65) thought that these stones were probably used for gaming. Several painted stones have been found at ORA-83, the Cogged Stone Site (Desautels, personal communication 2001). Stones covered with a smooth coating of asphaltum were mortuary items at ORA-58 (Ashby and Winterbourne 1966:27). From the above, it is clear that asphaltum folded into ritual practice in a variety of ways.

Azurite

Comparatively bright blue paint might possibly have been ground azurite (see Hudson and Blackburn 1987:185). The mineral was probably the pigment base of the distinctly blue colorant reported from a San Luis Obispo archaeology site and an Avila mortuary feature (Pilling 1951:197, 1952:171). Azurite almost certainly would have been a trade item from the desert. Parenthetically, Indians who painted decorative motifs at missions (Phillips 1976:97) possibly used azurite and even malachite imported from Mexico by the priests (see Webb 1952:233).

Chromite

Chromite or another chromium compound possibly accounts for some green tint. Instrumental Neutron Activation Analysis applied to green rock art pigment from SDI-708 (Luiseño territory) yielded a chemical signature consistent with the element chromium (Miller and Hurd 1992). Fuchsite has been mentioned as a colorant, and this may be what Miller and Hurd were investigating since this green variety of musco-

vite is characterized as having chromium in place of some of the aluminum.

Cinnabar

Putnam (1879a:22) incorrectly believed that cinnabar, or mercuric sulfide, was probably not used in prehistoric southern California. Henshaw, however, recorded its employment for paint (Heizer 1955:99). Also, statements by Harrington's informants point to its use as both pigment and medicine (a laxative) (Hudson and Blackburn 1987:30, 182-183). If actually used as a purgative or cathartic, one wonders whether it was mainly to counteract the effects of eating acorn meal, a food with the reputation for causing constipation. Heizer (1955:150-151) questioned whether cinnabar constituted a pigment for the Chumash (also Hudson and Blackburn 1987:182-183). One of Harrington's Barbareño informants, Luisa Ygnacio, denied that cinnabar was applied to face or body, instead saying it was an ingredient of medicine designed to cure a sore throat (Hudson and Blackburn 1987:183). The bones of a newborn, or perhaps stillborn child, from ORA-58 (Koerper et al. 1996:9-10) were coated with what appears to have been a gritty, pinkish-red cinnabar. Red Hill, in Tustin, Orange County, is the likely source of mercuric ore. Also, there is much cinnabar in the Barstow area (Calico Mining District). Some Chumash might have possibly obtained the mineral from mountains near Ventura and at Santa Ynez Valley (Hudson and Blackburn 1987:182).

Fuchsite

Fuchsite, a kind of green muscovite, may have been a paint pigment employed for Chumash pictographs. Georgia Lee (1979:302) writes:

It has been suggested that blue-green was probably obtained from locally available serpentine [see Grant 1966:85]. My personal experiments to date with serpentine have only succeeded in obtaining a grayish-white

color. However, fuchsite, a form of muscovite, which has been found in some Chumash graves from the Proto-historic Period (King 1969:37), produces a blue-green.

The mortuary-associated fuchsite found by Linda King (1969:37) in the Medea Creek Cemetery, LAN-243, had been processed into lumps. Galdikas-Brindamour (1970:141, 149-150) reported burial associated fuchsite at LAN-246 in the Santa Monica Mountains. Fuchsite has also been identified from two archaeological sites in the San Joaquin Hills of Orange County—Pelican Hill, ORA-662, and one of the French Flat sites, ORA-671. Two pieces from ORA-662 have deep grooves in them and are thought to have been raw material for making beads or ornaments (Mason et al. 1993:201). An unmodified small piece of fuchsite from ORA-671 exhibits a darkened exterior and a bright green interior that sparkles with minute inclusions of mica (muscovite). This piece is thought to have been collected for use as a pigment (Mason et al. 1992:108).

Ochre

Ochre refers to a mixture of iron oxide (the colorant) and clay, hematite for red and limonite for yellow. To our knowledge, no ethnographic/ethnohistoric statement reports local Native peoples enhancing colors in any shade of ochre by subjecting the minerals to the oxidizing action of fire. Such a practice, however, is known from some groups, the Cocopa near the Mexican border and the northeastern Paiute, for example (Grant 1966:85).

Ochre, white kaolin, and charcoal (e.g., Reid 1852; Dubois 1908:96; Kroeber 1908b:177; Sparkman 1908:210; Eastwood 1924:315; Strong 1929:298; Harrington 1934:16-17, 61, 1935:84, 1942:18; Heizer and Treganza 1944:310; Heizer 1955:99; Woodward 1959:14; Geiger and Meighan 1976:35, 48; Boscana 1978:20, 38; Hudson and Blackburn 1985:313-323,

1987:31-32, 179-186; Wiedmann n.d.:33) and bitumen (e.g., Harrington 1934:21) were reportedly the most common pigments for face and body painting. Such application, using at least red ochre, served as a kind of sun block (Kroeber 1908a:13; Heizer 1968:34; Hudson and Blackburn 1987:181-182).

Besides the human body, paint was applied to ceremonial objects such as sacred sticks (Strong 1929:311); ceremonial poles (Dubois 1908:103; Strong 1929) and shells, primarily the Giant Keyhole Limpet (*Megathura crenulata*) (Treganza and Valdivia 1957); and rocks used in girls' adolescence ceremonies (Kroeber 1922). Colorant, including ochre, was an important element in the Toloache Ceremony (boys' initiation rite) as well as other rituals incorporating ground paintings. Ochre was commonly used to produce pictographic art (Grant 1966; Lee 1977, 1979), much of which relates to cosmology.

There is also the recurring association of ochre with burials in coastal southern California (e.g., Putnam 1879a:22; Koerper 2001:31-32). Indeed, formed hematite "loaves" are mortuary goods in some coastal middens (Putnam 1879b:261; Harrington 1928:102). The vast majority of references to ochre statewide in Moratto's *California Archaeology* (1984) involve funerary associations. Rarely were sacred effigies fashioned of ochre. Koerper and Mason (1998), however, report a coggled stone carved out of red ochre, and Lee (1981:48) identifies yellow ochre as the material for one bird/hook stone.

Red ochre is mentioned as a talisman for the Chumash (Hudson and Blackburn 1986:140). Chumash mythology reveals the belief that pigment material itself could harbor magical potency. Kroeber (1907:240-242) describes a Yokuts version of a Chumash story of Coyote who applies a blue pigment stone to cure Prairie Falcon (see Hudson and Blackburn 1987:180). Some Gabrielino are said to have had the *noot* in several colors, including red (Harrington 1986:R103,

F342, cited in McCawley 1996:97), and one suspects that ochre, rather than reddish kaolin, might also have been used for this talisman. The Chumash, incidentally, associated red with both earth and fire (Hudson and Underhay 1978:45).

Many coastal sources are given for ochre used by the Chumash, including Santa Rosa Island (Wiedmann n.d.:33), ocean beach pebbles (Blackburn 1963:143-144), the mountains east of Santa Barbara (Heizer and Treganza 1944:310), Grimes Pass (Outland 1956:4), Quichuma (Santa Ynez Valley), and an area near Tejon (Hudson and Blackburn 1987:181). Crespi reported that "deposits of fine red ochre, and some others of very white earth" were located in the vicinity of San Juan Capistrano, in Juaneño territory. He adds, "we inferred at once that from this earth the heathen provide themselves for their paint, which is their gala dress for their visits and their war feasts" (Palou 1926:123-124).

Ochre was traded to the coast by the Mohaves according to Harrington's notes, as well as by the Yumas (Hudson and Blackburn 1987:31-32, 181-182). Speculatively, some of the Mohave-borne ochre may have ultimately derived from the Grand Canyon (see Anon. 1933:85), via the western Yavapai or Walapai (see Kroeber 1908c:62; Sample 1950:23). Good sources of ochre occurred in San Diego County, particularly in the Jacumbra Valley (Gifford 1931:35, 42; Rogers 1936:12). Reddish iron oxide was collected from spring waters (Dubois 1908:172; Sparkman 1908:209; Strong 1929:295; see also Harrington 1978:142-143) by Luiseño as well as by the Diegueño (Waterman 1910:294, 301; also Heizer and Treganza 1944:309).

Kaolin

White kaolin was one of the four most common facial and body painting pigments, along with red and yellow ochre, asphaltum, and charcoal (e.g., Harrington 1942:18; see also Dubois 1908:81; Waterman

1910:296-297; and Crespi 1927:123 for Luiseño). Red, white, and black were body colors appropriate to ceremonial dances (Harrington 1934:38; Boscana 1978:57). In discussing Juaneño rancherías, Boscana in Chapter 15 of his circa 1822 Chinigchinich manuscript mentions a village called *Tobe*. He explains that this placename “signifies a kind of clay or fine argil, white, similar to white lead, with which the women painted themselves” (Harrington 1934:61; see also Hudson and Blackburn 1985:332-334). Boscana also notes that white clay or fine argil was used to plaster the hair (Harrington 1934:12). In his later circa 1825 Chinigchinich manuscript, Boscana noted that the inland Juaneño mythology identifies a kind of white clay often used upon their heads by way of ornament (Boscana 1978:28). Such application may have served a grooming need. Bean and Smith (1978:541) report that Gabrielino applied clay to the hair, allowed it to dry, and then broke it away from their head, this “to keep the hair glossy and free of parasites.” Kaolin was also used as a soap to wash the hair (Hudson and Blackburn 1987:32-33), and some cultural groups thought it was beneficial for dandruff (Sparkman 1908:210).

Kaolin was regarded as having magical/medicinal properties (Duflo de Mofras 1937:I, 191; Harrington 1978:134-135). When ground up, its application to the legs conferred speed and endurance when running, just one of its many “magical advantageous purposes” (Harrington 1978:134).

The term *noot* (*noth*, *not*, *noth*) may be applied to several kinds of objects, including soft rock composed mainly of kaolin. According to White (1957:8), Luiseño *noth* stones resembling “small crude effigy heads” served as talismans. It is neither clear whether this is also a reference to kaolin, nor whether the forms referred to were naturally occurring or modified by human agent. It is possible that some *noot* was steatite, especially Catalina Island micaceous steatite, since Harrington (1986:R103, F342 cited in McCaw-

ley 1996:97) did record an informant’s description of the *noot* stone as of “gray color, with sparkling pieces in it that look bright as silver.” We suspect that the vast majority, if not virtually all *noth* stones, were natural, not modified.

Red *noot* is reported for the Gabrielino (Harrington 1986:R103, F342, cited in McCawley 1996:97). It is uncertain whether this was an ochre or reddish kaolin. It might be instructive to explore whether heat treatment might turn some kaolin red. Also, there are other sources of red colorant that, speculatively, might have been mixed with kaolin. For instance, reddish material was obtained locally from iron oxide recovered out of spring waters impregnated with iron (Sparkman 1908:209; Strong 1929:295; see also Harrington 1978:142-143). Not only did the Luiseño in northeastern San Diego exploit spring sources, so did the Diegeño (Waterman 1910:301; also Heizer and Treganza 1944:309) who collected the red oxide from mineral springs. There is further mention of red pigment extracted as a juice from the red tuna cactus fruit (Hudson 1978:17; Hudson et al. 1977:50; Hudson and Blackburn 1987:180). J. P. Harrington also learned that the sea hare (*Aplysia californica*) and the octopus (*Octopus* spp.) were sources of red colorant (Wiedmann n.d.:33; Hudson and Blackburn 1987:181). The sea hare discharges a harmless deep purple fluid when it is handled (Ricketts and Calvin 1962:77; MacGinitie and MacGinitie 1968:376; Reish 1972:55-56), while the octopus exudes ink that is sepia-colored, or brown with a reddish-yellow tint (Ricketts and Calvin 1962:77, 94).

In discussing the creation mythology of those “residing on the sea coast,” Boscana (1978:23) records the primal food as a “kind of white clay.” Harrington (1978:125, Note 42) recognizes that the white clay, which can be yellowish or grayish, is kaolin.

Locally, there were probably several kaolin sources. Father Crespi reports deposits of “very white earth”

observed by the Portolá Expedition on July 23, 1769, prior to arriving at Santa María Magdalena, or San Juan Capistrano (Crespi 1927:123; also Engelhardt 1922:240). This was six miles south of Mission San Juan Capistrano (Harrington 1978:125). We might reasonably presume that *Tobe*, the Juaneño rancheria named for the white clay, was in the vicinity of the multipurpose resource. Dufлот de Mofras reported that the Gabrielino traveled to San Clemente Island to obtain kaolin (Wilbur 1937:I, 191). Also, between the Channel and La Purísima, Indians knew of “a larger vein of natural soap, which can be used in the same way as artificial soap” (Simpson 1961:50-51). This “white clay” is undoubtedly kaolin, and it is said by Longinos Martínez to be “charged with sufficient fat and calcareous particles to make its solubility and other characteristics resemble those of true soap” (Simpson 1938:40, 1961:50-51). With reference to the Chumash, Grant (1966:85) reports that the “best white was made from diatomaceous earth of which there is a large deposit near Lompoc” (also Webb 1952:233; Lee 1981:25). There were other well known sources of diatomaceous earth in Chumash territory (Hudson and Blackburn 1987:184-185).

Manganese Dioxide

Manganese dioxide was sprinkled into graves (Putnam 1879a:22) and was used as paint (Smith 1954). The hydrous oxide of manganese referred to by Putnam would have been a sedimentary precipitate (a.k.a. bog manganese). Putnam (1879b:262) reported mixtures of what are believed to be “manganese” [manganese dioxide] and specular hematite as funerary offerings near Santa Barbara. Campbell Grant (1966:85) noted a small mass of hydrous manganese dioxide that the Indians had kept for paint. The Gabrielino are said to have obtained manganese dioxide from the Cahuilla for manufacture of a black pigment (Harrington 1942:18). The Imperial Valley Kamia used impure manganese dioxide (psilomelane) for face paint (Gifford 1931:34-35). Sherwin (1963:88) states that the

Salinan natives used hydrous oxide of manganese to make a blue paint.

Steatite

The relative softness of steatite lends itself to near effortless carving of a variety of utilitarian and non-utilitarian items. The softer varieties were easily powdered as the occasion required. DuBois’ mention of “powdered mica” as colorant identifies soapstone (1908:172). The Chumash and possibly the Gabrielino pulverized steatite to make pigment (Taylor 1861:36, cited in Hudson and Blackburn 1987:179). The sacred ground paintings of the Luiseño might have incorporated ground steatite (Kroeber 1925:664). Diegueño powdered steatite to make white body paint (Waterman 1910:298, 301, 309, see also 297).

Alum Stone

“Alum stone” refers to aluminum potassium sulfate and other sulfates. These sulfates are translucent to transparent and are easily rendered into powder. The texture and natural color of this crystalline solid resembles white kaolin. Alum usually exhibits a dull waxy luster. The Gabrielino/Fernandeño made use of “dust of alum stone” (Kroeber 1908a:15).

From Harrington’s investigations (Hudson and Blackburn 1987:28) alum (*’ayip*) was accorded magical/miraculous powers. Burning whitish alum caused color changes, including green, red, and black.

White alum made women fertile and could also be employed to achieve victory in a game. Red alum, slightly touched against one’s body, immediately precipitates sickness (Walker and Hudson n.d.:50-51, 1993; see also Hudson and Blackburn 1987:28). Fernando Librado described a role for green alum:

An insect of any kind would be put on a piece of green *’ayip*. After this was burned, the ashes were dropped on a person’s body, or

placed in a person's food. The insect would come to life again in that person's body and devour that person [Walker and Hudson n.d.:50-51, 1993].

Black alum applied to an arrow shot at an enemy could, on merely passing the intended victim, cause him to "totter and roll as if drunk..." (Walker and Hudson n.d.:50-51; 1993).

Fernando Librado said *'ayip* was a rock that Indians obtained from Tejon. Some persons were never without the dangerous *'ayip* on their person (Hudson 1979b:36). Carobeth Laird (1975:54-55) reported that Harrington located this alum source on the banks of the Tule River and that it served as an astringent and styptic.

Copperas

Kroeber (1908a:15) lists copperas, or hydrous iron sulfate, as holding some importance for the Gabrielino/Fernandeño. Long before Kroeber, Dufлот de Mofras reported Gabrielinos traveling to San Clemente Island to obtain "sulfate of iron" (Dufлот de Mofras 1937:I:91). Also known as melantenite, this soft (Mohs 2), white or greenish-white mineral often forms from iron-sulfides (e.g., pyrite) (Chesterman 1978:461-462). We are unaware of any archaeological documentation of copperas in Orange County. Whether copperas achieved talismanic status remains unknown.

Galena

Galena, or lead sulfide (PbS) is opaque with a bright metallic luster and is most commonly found in cubic form (Hurlbut and Klein 1977:240-242; Mottana, Crespi, and Liborio 1978:25). This heavy mineral leaves a lead or dark grey color against a geologic streak plate. Galena is the principal ore of lead and occurs in contact metamorphic deposits, in pegmatites,

and in disseminations in sedimentary rock (Hurlbut and Klein 1977:242). Galena is listed as occurring in as many as 33 California counties (Murdoch and Webb 1966:189-192; Pemberton 1983:101-105), including Orange and Los Angeles Counties.

Galena is known to have a common silver or argentiferous form, which is an important silver ore (Murdoch and Webb 1966:189; Hurlbut and Klein 1977:240; Mottana, Crespi, and Liborio 1978:25), although geologically the silver is considered an "impurity." Because of galena's propensity to contain silver, it was mined in southern California primarily after the discovery of silver-lead-zinc deposits in the northern Santa Ana Mountains (Morton, Miller, and Evans 1976:193). Within the Silverado Mining District, the Madera Mine (later known as the Blue Light Mine), located 1.0 km from Silverado Peak, was first worked by Indians and Mexicans from about 1850 to 1868 (Morton, Miller, and Evans 1976:193, 237). In 1877, this excavation was found by miners who filed claims the following year, thus beginning the short-lived Silverado boom (Morton, Miller, and Evans 1976:193, 238). The Santiago/Silverado area is 26-32 km north-east of ORA-269, where as noted above, a galena manuport recently was unearthed.

ORA-269

Site ORA-269 is a rockshelter and corresponding midden apron located on the northern slope of the San Joaquin Hills near their western terminus above Newport Bay (Fig. 1). Approximately 1.8 km north-northwest of Signal Peak, it rests on a southerly facing ridge 1.2 km west of Bommer Canyon and 1.6 km east of Coyote Canyon. The shelter is an enlarged recess into a sandstone boulder outcrop. Measuring approximately 13 meters (m) across the face, and just over 2 m high at its greatest extent, the useful portion of the rockshelter is about 10 m wide and between 3-4 m deep. Because of the angle of the outcrop, the opening faces south-southeast.

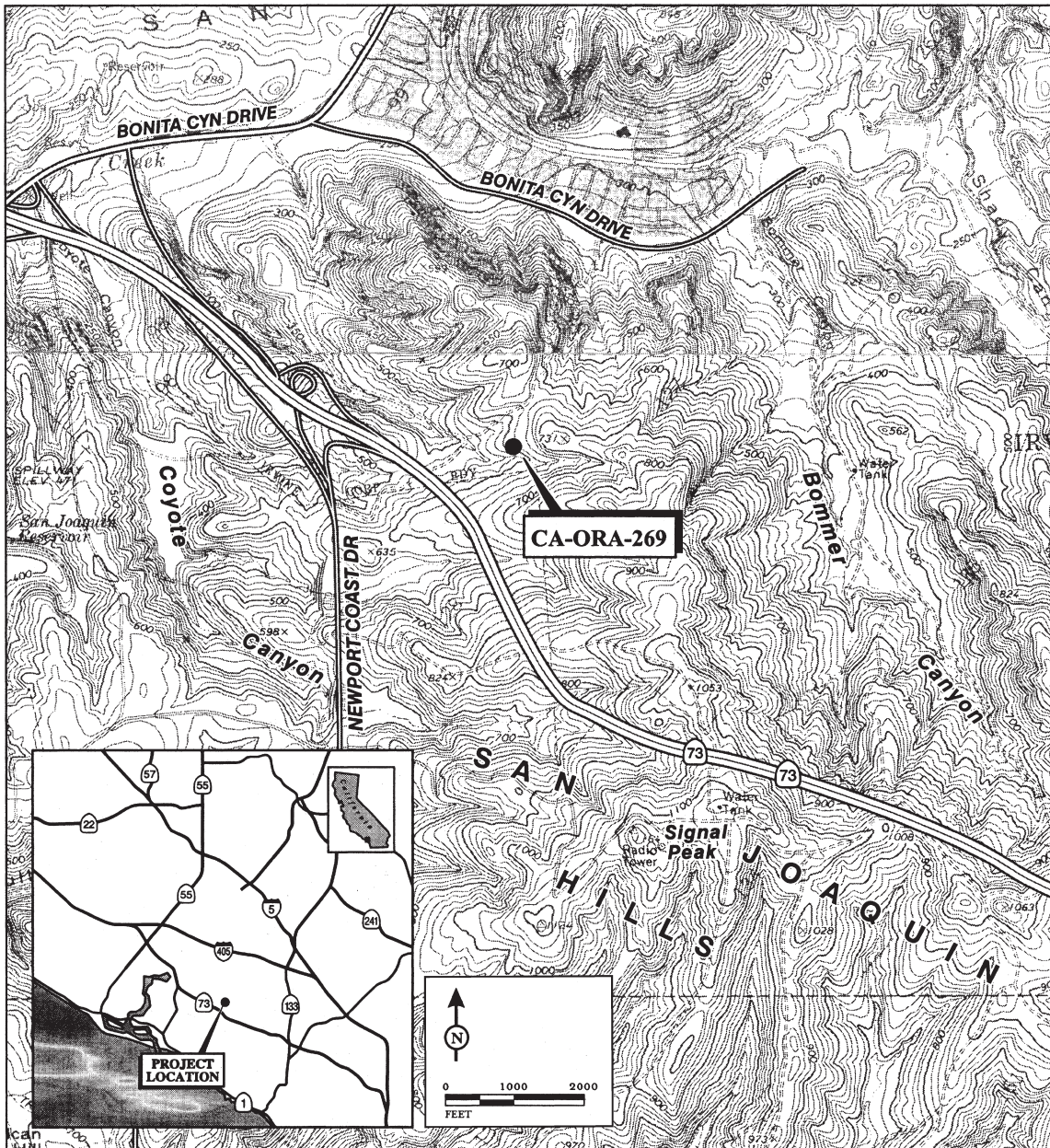


Fig. 1. Location of ORA-269. Source: USGS 7.5' quadrangles Tustin and Laguna Beach.

ORA-269 is particularly notable for being a rock art site in a county which, because of poor preservation, probably has less rock art information than any other region in California (OHP 1988; McCarthy 1992). When Antos (1969) first recorded the site, he recognized a rattlesnake petroglyph on the rear

wall (McCarthy 2001). There is also a faded red diamond-shaped pictograph gracing a rear panel of the shelter near the petroglyph. Boasting both a petroglyph and a pictograph, ORA-269 was clearly a sacred place where ritual activities occurred. Caves and rock shelters functioned as sacred sites in coastal

southern California (Bowers 1885a, 1885b; see also Bensen 1997:32; True and Waugh 1986:270; Whitley 2000:100; Hedges 2001:128).

ORA-269 encompasses an area of approximately 1,800 square meters, larger than nearly all local San Joaquin Hills rockshelters with associated midden aprons. The dark midden deposit reaches a maximum depth of 380 cm (15 m downslope and in front of the shelter opening), although it varies from 40 to 100 cm at the shelter opening. Its dense deposit of marine shell, flaked and ground stone artifacts, fire-affected rock, and the petroglyph and pictograph now lie preserved under 15 m of fill sediment. A small spring was until recently located 40 m south and downslope of the shelter. This spring surfaced on exposed bedrock and was observed to provide a steady flow of water even in summer months during a three-year drought.

The Ora-269 Galena Specimen

The piece of galena from ORA-269 (Fig. 2) measures 60 by 51 by 27 mm and weighs 209.5 g. Its weathered surface exhibits a worn and slightly rounded exterior with only a faint remnant of its naturally cubic form showing. A bluish metallic luster is visible on one side where a small piece dislodged when it was hit with an excavation pick, but other than that, the specimen exhibits none of its original metallic luster.

The specimen comes from Unit 171 (N-26 E-31), at a level of 40-50 cm. This unit is located on the apron, 17 m directly southwest of the west side of the shelter opening. Unit 171 was excavated to 60 cm where it ended on sandstone bedrock. Clearly, the specimen was not introduced in the historic period.

The Ethnographic and Ethnohistoric Record

Spanish period sources identify galena as both a pigment for paint and a talismanic mineral. A 1602 reference to a blue metal used for painting in the Santa

Barbara area (Wagner 1929:237) almost certainly implicates galena in colorant production. Sebastian Vizcaíno wrote:

The black paint, or rather blue paint, appeared to be silvered, and ... they displayed some stones of metal of London blue, from which they made it [Wagner 1929:233].

Parenthetically, Heizer and Treganza (1944) suspected galena was a possible pigment material, but they questioned whether Vizcaíno actually might have seen a mixture of manganese dioxide and specular hematite, which Putnam (1879b:262) had noted for graves in the Santa Barbara area and on Catalina Island.

Much later, a different Vizcaíno, Fray Juan Vizcaíno (Woodward 1959:14), and Lieutenant Pedro Fages (Priestly 1937:36) also seem to have made observations on the use of galena for body paint. The priest recorded heat treatment as part of the process used to produce a black pigment, and the soldier recorded grinding of a “plumbiferous,” or lead-bearing, stone. Galena is also possibly indicated in Ascensión’s (Wagner 1929:237) note regarding pieces of blue metal used in body painting.

In 1792, José Longinos Martínez noted that stones containing “lead,” quite possibly isometric crystals of galena, commanded a high price for Santa Catalina Indians who exchanged them with people on the mainland. Referred to as stones of “lead in galena ferulata, with silver,” or “galena ferulata, with silver” by Longinos Martínez (Simpson 1938:52, 110, note 29; 1961:60, also note 16), these “stones of silver and lead” might be strung together (Simpson 1938:52, 1961:60). Longinos Martínez’ observation that galena was associated with valor and bravery is *prima facie* evidence that the mineral served in the capacity of talisman or amulet. The colors blue or black were associated by Chumash with rain (Hudson and Underhay 1978:45). Perhaps galena was one of the minerals Hoffman (see Heizer 1968:123) considered when he

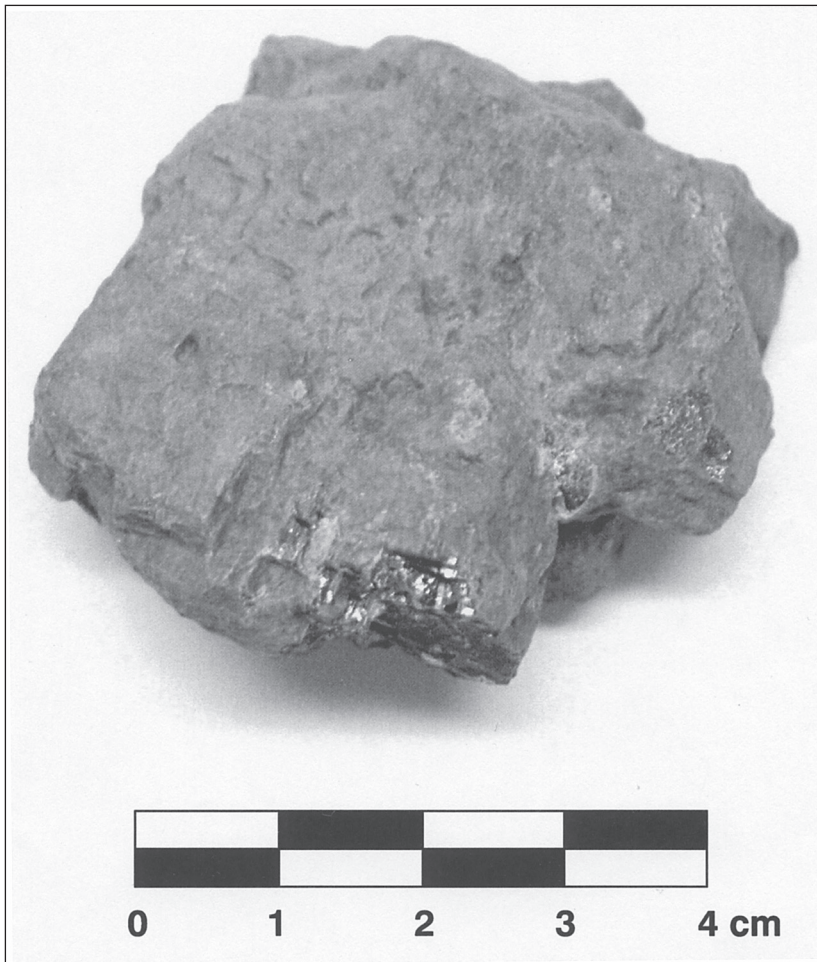


Fig. 2. Galena specimen exhibiting shiny galena crystals at bottom where excavation pick dislodged weathered exterior.

reported that “rare sparkling minerals” were employed by the Gabrielino as “fetishes.”

A Kitanemuk informant told Harrington of his familiarity with a blackish, but blue-tinged, slightly shiny pigment. Called *monusmu'* by the Ventureño and *tuhut* by the Kitanemuk, it was brought coastward by the Yuma and the Mohave (Hudson and Blackburn 1987:184).

Whatever binder was employed for galena pigment is a matter of speculation. Water would have been sufficient for body painting (see Waterman 1910:309). Recounting a Yokuts practice, Grant (1966:86) suggests

that the Chumash might have also added a concoction of milkweed (*Asclepias fascicularis*) mixed with oil from crushed chilicothe (*Echinocystis macrocarpa*; also *Marah macrocarpus*) seeds. Luiseño possibly ground the kernels of the seeds to produce a binder (Sparkman 1908:210). As an artist, Campbell Grant also raises the possibility of animal oil as well as the whites of birds' eggs (1966:86) for binders. One possibility for “animal oil” might be marrow (see Hudson and Blackburn 1987:184). Christensen and Dickey (1996:21) offer a succinct discussion regarding binders and diluents.

Source Location and Trade

Since 1863, galena has been recognized as fairly common on Santa Catalina Island (Probert 1982:486), a distance of 56 km from ORA-269. Adolph Pabst identified one source of galena at the east end of Catalina Island (Simpson 1938:52, 1961:60). Randolph (1935:7-8) believes this mineral came from Silver Canyon, Santa Catalina.

In Orange County, galena is described from the Alma Mine in Santiago Canyon (Murdoch and Webb 1966:191). The Santiago/Silverado area is only 26-32 km away from ORA-269. Yet a third galena source is the Felix fluorite mine in Azusa (Murdoch and Webb 1966:190), 54 km from ORA-269.

While galena is well-documented for coastal areas, it is possible that a processed galena paint product may have been an import from desert regions. As noted above, a shiny black, but bluish-tinged pigment was described by a full-blooded Kitanemuk informant of J. P. Harrington, Eugenia Mendez, who attributed the commodity to Yuma or Mohave trade (Hudson and Blackburn 1987:184).

Lacking chemical characterization of the ORA-269 specimen, as well as of galena from the above mentioned locales, definitive source identification is not possible. If the Santiago/Silverado area proves to be the source, then direct procurement of the mineral is a possibility. Any other source determination would tend to support the idea of acquisition through trade.

Concluding Remarks

Galena functioned as a pigment stone and a talismanic mineral for at least some prehistoric groups along coastal southern California. ORA-269 is a habitation site at which ritual activities occurred. Both a pictograph and a petroglyph are recorded at this rock shelter. The petroglyph probably represents a rattlesnake,

and if so, this supports interpretation of the rockshelter as a sacred place. The pictograph is also likely to have represented the poisonous reptile (see e.g., Strong 1929:229, 314; Oxendine 1980:42, Fig. 3; Cohen 1987:23). The viper was an avenging Chinigchinich animal (Sparkman 1908:218; Harrington 1934:14, 51, 132-133, 1978:129-133; Boscana 1978:29, 34; Applegate 1979:81), a protector of sacred places (True and Waugh 1986:270, 272), and played a guardian angel role to some individuals (Harrington 1934:17; Boscana 1978:45). Diverse narratives including formal mythology reveal many special aspects of rattlesnake imagery (e.g., Blackburn 1975:131, 199, 273-276; Lee 1977:2; Harrington 1978:130; Hudson and Underhay 1978:52; Hudson 1979a:358-359; Hudson and Blackburn 1986:141; Ramon and Elliot 2000:218; see also Whitley 2000:101).

Caves and rockshelters traditionally served as ritual sites in coastal southern California (Bowers 1885a, b; see also Benson 1997:32; True and Waugh 1986:270, 272; Whitley 2000:100; Hedges 2001:128). Galena is not out of place at a sacred site since the mineral is known to have talismanic status for some local native groups.

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