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Indian Sandpaintings of Southern California

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SANDPAINTINGS created by native southern Californians were sacred cosmological maps of the universe used primarily for the moral instruction of young participants in a psychedelic puberty ceremony. At other times and places, the same constructions could be the focus of other community rituals, such as burials of cult participants, ordeals associated with coming of age rites, or vital elements in secret magical acts of vengeance. The "paintings" are more accurately described as circular drawings made on the ground with colored earth and seeds, at times employing other natural materials or artifacts.

Created in an atmosphere of utmost secrecy and piety, the drawings were the culmination of an elaborate theatrical performance which was conducted by an intertribal group of shamans, elders, initiates, and lay participants. The cosmological diagram had to be created anew before the eyes of each crop of initiates, and was then purposely destroyed in order to hide it from unqualified observers. Although the map was intended to be reproduced as closely as possible to its traditional format, each was unique in that a part of the individual for whom it was made was symbolically incorporated in the diagram, and by extension, the universe. First reported by the explorer Vizcaíno in 1602 (Venegas 1966:106-107), sandpaintings had largely died out by the beginning of the present century owing to the pressures of missionary activity and large scale Euro-American immigration.

While sandpaintings of southern California

were similar in technique to the more elaborate versions of the Navajo, they are less well known. This is because the Spanish proscribed the religion in which they were used and the modified native culture that followed it was exterminated by the 1860s. Southern California sandpaintings are among the rarest examples of aboriginal material culture because of the extreme secrecy in which they were made, the fragility of the materials employed, and the requirement that the work be destroyed at the conclusion of the ceremony for which it was reproduced. A photograph of one has yet to be published.¹ However, detailed descriptions and rough schematizations recorded by early ethnographers can be used to reconstruct this now-lost art form.

A synthesis of information collected on California sandpaintings has yet to be made. Descriptions of the ceremonial contexts in which the paintings played a role are available in the classic ethnographies of southern California published in the first decade of the twentieth century (Rust 1906; Du Bois 1908a; Kroeber 1908a, 1908b; Sparkman 1908; Waterman 1910). These were supplemented by the studies of subsequent investigators (Spier 1923; Strong 1929) and partially summarized by Kroeber (1925). Salvage work by anthropologists in the 1930s was largely limited to recording the prior existence or absence of sandpaintings among tribes of the consultants interviewed, without placing this knowledge in a wider, theoretical framework (Gifford and Lowie 1928; Gifford 1931, 1933; Drucker 1937; Meigs 1939). More recently,

culture historians such as Hudson (1979) and Oxendine (1980) have added to the corpus of information on sandpaintings by publishing data from the fieldnotes of John P. Harrington, collected between 1910 and 1930. However, no in-depth, cross-cultural analysis of sandpaintings has been attempted.

This paper considers the sandpaintings of southern California from a variety of points of view. Included are a reconstruction of the origin, diffusion, and historical development of the phenomenon, the role of the art in its religious context, and a stylistic analysis and comparison of similarities and differences in conception across a wider geographical area. The paper also considers the paintings as cartographical projections, and discusses how they reflect native ideas about the cosmological structure of the universe and the moral place of humans in it. Ceremonies which accompanied the ground-paintings are described here only in a schematic/summarized form because of space limitations and the availability of full exposition in the literature. Thus, the study is concerned primarily with the function of the paintings in ritual as part of an intertribal network of reciprocal social relationships. Comparisons with other pictographic tribal art forms are explored also.

FORM AND SYMBOLISM

Considered as a group, the sandpaintings of southern California convey an impression of stylistic homogeneity. Most were round in shape and measured from one and one-half to eighteen feet in diameter. The circle often was composed of several concentric rings, and frequently was bisected by lines referring to the cardinal directions. A round cavity was dug in the center of the painting and around it often were grouped roughly linear figures and variously shaped mounds of colored earth. These figures and

mounds were meant to symbolize animals, geographic features, and heavenly bodies (Fig. 1, upper).

Color Symbolism in Sandpaintings

Colors employed in the paintings came from a variety of sources and had specific symbolic meanings.² For instance, in the sandpainting made for the Luiseño girls' puberty ceremony, the white outer circle represented the Milky Way; the red central one, the sky; and the black inner one symbolized "our spirit" (Du Bois 1908a:88) (Fig. 1, upper and lower). The fact that the layered universe concept was associated with color symbolism is interesting in that, with the exception of the Northern Diegueño, or Ipai, southern Californians lacked the highly developed association of colors with particular directions that is so characteristic of the Plains and Southwestern tribes.³

Beyond cosmological symbolism, the colors had complicated sociological implications. In many native southern California languages, the term "*paha*" or shaman meant "red racer snake."⁴ Shamans painted themselves red on one vertical half of the body and black on the other to represent a union of the male racer snake, which is red, with the female of the species, which is black.⁵ Red and black snakes are a central feature of Ipai sandpainting and are considered to be "beyond all other creatures the medium through which falls punishment for ceremonial offenses" (Waterman 1910:303) (Fig. 2, upper). Their importance is also emphasized in that they are one of the only animals in the sandpaintings depicted naturalistically, with attention to actual detail, rather than with stylized right angles meant to symbolize various creatures. Red and black body painting also distinguished Luiseño moieties (Strong 1929:290) and Southern Diegueño sexes (Spier 1923:341).

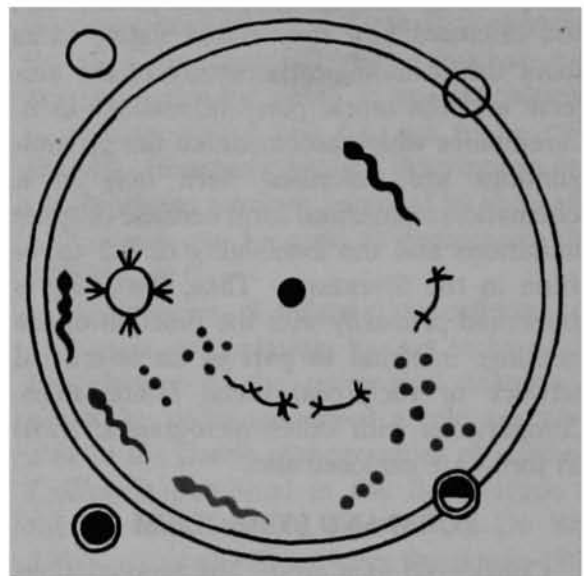
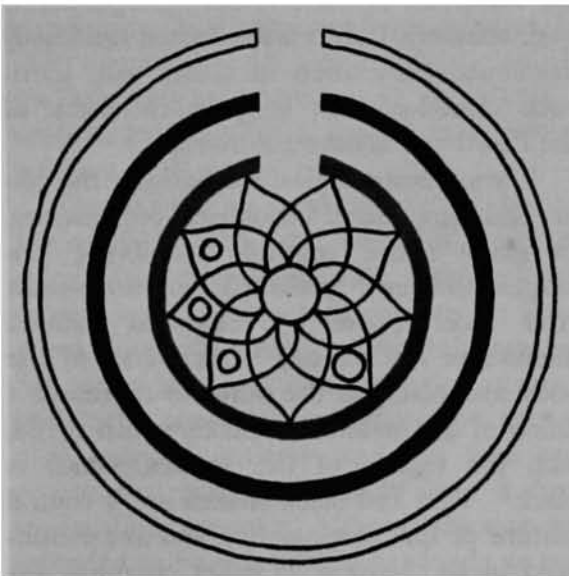
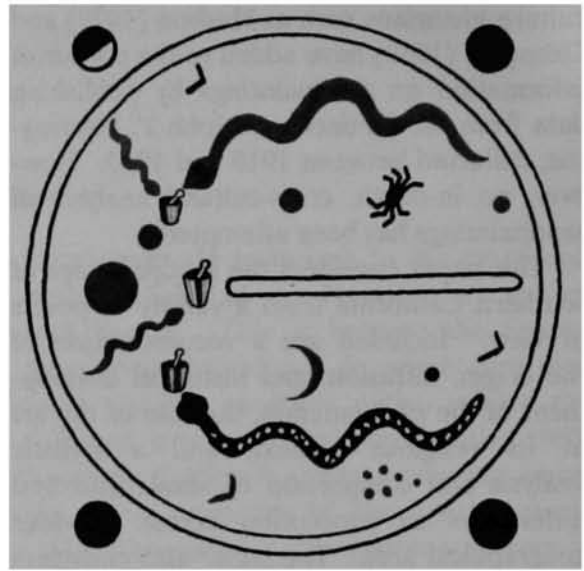
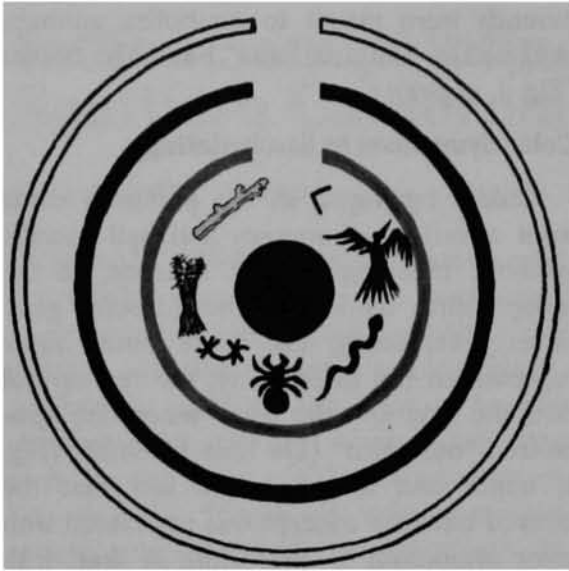


Fig. 1. Sandpaintings used in Luiseño girls' puberty ceremony. Upper, after Kroeber (1925:Fig. 16); lower, after Du Bois (1908a:Fig. 2).

Fig. 2. Sandpaintings used in Ipai boys' puberty ceremonies in two different villages. Upper, from Waterman (1910:Plate 24); lower, from Waterman (1910:Plate 25).

Sandpainting Materials

The materials used in the sandpaintings also had a symbolic and ceremonial significance. Throughout most of California and in many parts of the western states, participants in the girls' initiation were made to lie still for several days in a pit lined with

heated sand. Here they were deprived of all food and even movement, in order to prove their endurance and readiness for life's future hardships. Warm sand was also applied to make the sick strong, and to ease women after childbirth (Underhill 1941:37). Thus, the medium of the sand itself was

conceived of as a strength-inducing, life-giving agent which became particularly important in the ceremonies surrounding most of the occasions for producing sandpaintings. The Luiseño also created a groundpainting upon the deaths of those who had taken jimsonweed, in which the personal feathers of the deceased were buried in the central hole of the painting (Du Bois 1908a:92-93). According to Villasenor (1963:11), the white ashes and charcoal dust were "symbolic of the fire, or life that has gone out of existence and returned again to the place of emergence." When applied directly to the body for decoration, the same materials were thought to have medicinal qualities including protecting the body from heat in the fire dance (Du Bois 1908a:81), from cold after taking jimsonweed, and to promote longevity (Waterman 1910:297).

Comparing the materials used in the sandpaintings of California and the pollen and meal paintings of the Southwest, Underhill (1948:46) concluded that

the meal symbols developed among agriculturalists concerned with growth ceremonies while the sandpainting was a tool of the shamanistic healer. In view of its constant connection with initiation, I am more inclined to connect it with that rite and with the instruction of youth.

This fundamental difference in style and usage is addressed below when the question of cross-cultural influences is considered.

Besides ground minerals and plants, other materials used in southern California sandpaintings included *Haliotis* (abalone) shell for the eyes of the snake in Ipai painting (Waterman 1910:305) (Fig. 2, upper) and a braided cord of milkweed (*Asclepias* spp.) symbolizing the Milky Way in Tipai painting (Spier 1923: 320) (Fig. 3).

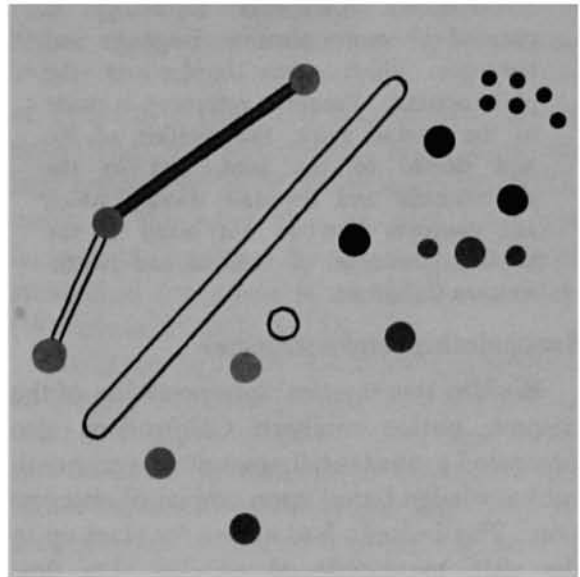


Fig. 3. Tipai sandpainting (after Spier 1923:320).

Sandpaintings and Cosmology

Since sandpaintings were illustrations of the universe as conceived in the mythology and beliefs of southern California tribes, an understanding of native cosmology is vital. Applegate (1977:110) provided a succinct summary of the data.

A tripartite division of the universe into upper, middle, and lower worlds is a basic cosmological assumption throughout California. . . . The middle world is the world of men, usually circular and surrounded by a sea or void; each tribe considers its homeland to lie at the geographical center of this middle world. The upper world is the world of powerful supernatural beings--including creator figures, culture heroes, the first people of mythic times, and other largely anthropomorphic beings--who are often benevolent toward man. The inhabitants of the lower world are more often malevolent; in form they are frequently water creatures or distorted humanoids.

Comparing the mythology of southern California with the rest of the state, Heizer (1978:656) pointed out:

Southwestern California mythology is phrased in more abstruse language and concepts, which often border on the philosophical. Frequent reference is made to the human spirit, the relation of life and death, to the soul, and to the earth-female and sky-male duality, which are concepts that do not occur in the tribal mythologies of Central and Northwestern California.

Sandpaintings and Astronomy

Besides this mystical interpretation of the cosmos, native southern Californians also possessed a substantial amount of astronomical knowledge based upon empirical observation. The Luiseño had names for stars up to the sixth magnitude of visibility (Du Bois 1908a:163-164). Many tribes included astronomers who carefully noted the rising and setting sun, the solstices and the movements of heavenly bodies. Among the Luiseño, Chemehuevi, Cahuilla, and Cupeño, star watchers indicated the optimum time for gathering certain foods and giving certain ceremonies (Hudson et al. 1979:52).⁶ Southern California was an area rich in star lore, and constellations, planets, stars, and the Milky Way were the subject of elaborate mythological explanations (Du Bois 1908a:162-164; Gifford 1933:286-287; Hudson 1978). Many of these same heavenly bodies were included by name in the sandpaintings. Astronomical knowledge was thus a combination of beliefs stemming from observation of phenomena and mythological explanations for their origins.

The tripartite division of the universe referred to by Applegate (1977) above was represented by three concentric rings in the sandpainting. The white outer layer stood for stars and the Milky Way, or heaven. Spirits of the dead who had followed religious injunctions in their lifetime rose toward the sky, and became part of the vis-

ible cosmos (Underhill 1941:42; Applegate 1977:109). A black middle layer symbolized man and his earth, while a red inner circle stood for the underworld. From their central location, humans were in an ideal position to employ power drawn from the upper and lower worlds.

The danger of uncontrolled power is believed to increase in a series of concentric circles the farther one moves away from one's immediate social universe. . . .

. . . To maintain a viable world, it is considered mandatory that man acquire knowledge about the universe [Bean 1976:411].

Here then is one reason for geographical instruction via the sandpainting. Another reason is seen in the notion that precise astronomical knowledge, which was both charted in standardized form and transmitted by sandpaintings, was a source of power for the Luiseño or Diegueño astrologer specialist. These shamans could predict food and game resources, life expectancy, and divine success or failure in human enterprise by keeping watch over the personified cosmos or Sky People (Hudson and Underhay 1978:42-43).

Not only were important astronomical features described in the sandpaintings, but the variations in appearance of these bodies as well. For instance, in Ipai painting, the full moon was placed in the center, the new moon in the northern half of the circle, and the last quarter in the southern half of the picture (Waterman 1910:301) (see Fig. 2, upper). While the demarcation of the phases of the moon indicated the various appearances of one celestial body, southern California astronomers incorrectly viewed the morning and evening aspects of Venus as separate celestial and supernatural beings (Hudson and Underhay 1978:97).

Waterman presented a possible reason for the circular projection of the universe in the

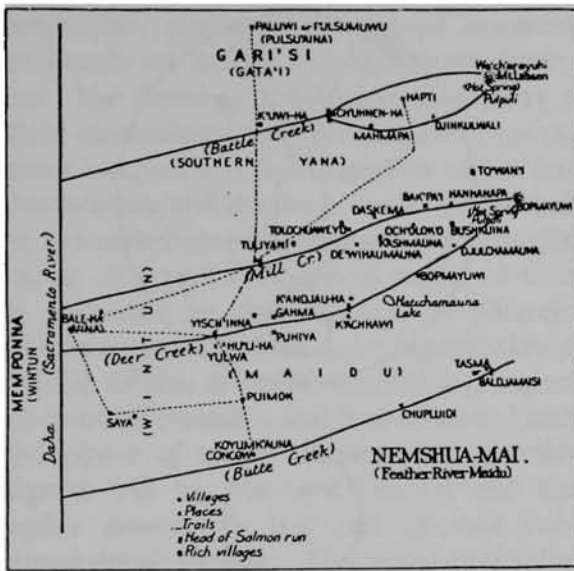


Fig. 4. Map of Yahi territory, drawn by Ishi (Kroeber 1925:344).

sandpainting. He noted that the visible limits of the earth, or horizon, seem to curve around the viewer when seen from the ground in a place where the view of the horizon is unobstructed. In the sandpainting, the circle marks the place where the sky appears to touch the earth. Stars and other heavenly bodies are shown within its limits, since this is how they appear to a ground-based observer. The path of the sun is considered to "make" the large circle, and is therefore drawn near the circumference (Waterman 1910:301). Native astronomers also recognized the circular movement of the circumpolar stars, which also might explain why they conceived of the upper world as round (Hudson and Underhay 1978).

Sandpaintings as Maps

The same circle represented the outline of the terrestrial world (Kroeber 1908a:177, 1925:662; Underhill 1948:42). Within its boundaries were mounds and markings which symbolized geological and ecological features, often named mountains, springs (Spier 1923:319), rivers, or islands (Waterman 1910:302-

303) in the vicinity. The village was the center of the most concentrated power available to shamans, which decreased in a series of concentric rings the farther one moved away from the settlement. Since each village considered itself the true center of the universe, the sand map of each tribe was laid out to represent the local topography as seen from the place in which it was made (Waterman 1910:303) (Fig. 2).

Referring to California Indians in general, Kroeber (1906, 1925) wrote that the natives did not think in terms of maps, and therefore could not produce them. Although California Indians had an excellent knowledge of their own environment, they had no concept of a contiguous territorial space enclosed by a linear border. Rather, two tribes might share the same area, some keeping to the highlands, and some inhabiting the rivers and tributaries (Kroeber 1906:312, 1925:344) (Fig. 4). Only in southern California were geographical diagrams attempted, but as we have seen, they were in highly ritualized form.

Kroeber's contention that the California Indians did not use maps has since been amended by Heizer (1971). It now seems apparent that California Indians not only employed terrestrial cartographic schemata, but constellation maps as well.⁷ Their geographic conceptions, however, were different from our own. For example, the aboriginal idea of the intermingling of events in this world and the upper world was reflected in their attitudes toward environmental landmarks. The Yurok of northern California believe that access to the upper world is provided by ladders and sky holes which literally exist, and the homes of mythological characters have definite locations in the heavens (Waterman 1971:473) (Fig. 5). This integrated view of the universe also was quite common in southern California sandpaintings and mythology.

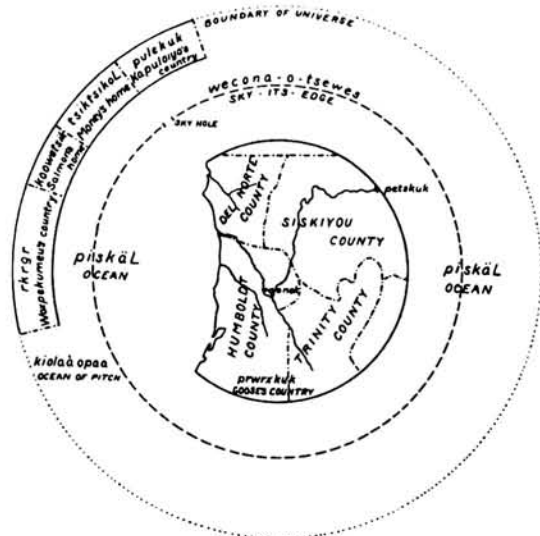
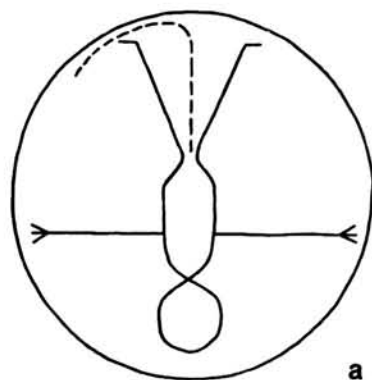


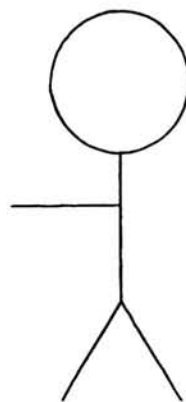
Fig. 5. Diagram made by T. T. Waterman in 1920 to show the Yurok conception of the universe (Heizer 1978:655).

Cardinal directions were imagined quite differently by California Indians. The Yurok idea of east and west is upriver and downriver, regardless of its meandering (Waterman 1971:474). Likewise, in parts of northern Baja California, east and west refer to the location of the Pacific Ocean and the Gulf of California, not to the rising and setting sun (Meigs 1939:13).

Maps of local areas could also be clearly dominated by religious ideology. Figures 6a and 6b illustrate drawings used by the Luiseño and Kiliwa whenever the origin myth was retold. Both were typically executed in sand. The Luiseño version illustrates the earth mother, while the Kiliwa figure stands for a masculine creator figure. In the latter case, the assassination of the mythological *Metalkwa'Ipaiw* resulted in the slump of the body in an outstretched position, whereupon his limbs and head were transformed into mountains and valleys (Meigs 1939:72).⁸ Thus, the figure not only literally depicted the corpse of the fallen hero, but parts of his body were represented in specific geo-



a



b

Fig. 6. Sand maps drawn when retelling the creation story. Upper, Luiseño (Kroeber 1906:312); lower, Kiliwa. The lower diagram (after Meigs 1939:73) represents the mythological hero *Metalkwa'Ipaiw*, who was transformed into the topography of central Baja California following his murder.

graphical locations which could sometimes be pointed out in the immediate vicinity. These references to the surrounding topography were visible "proof" that the mythological origin ascribed to the features was true. It is not known, however, whether the simultaneous representation of the world by a lying figure and a circular diagram caused any conflict among members of Luiseño and Kiliwa societies, who possessed both types of diagrams.

In view of the religious and cultural influences upon aboriginal geographical knowledge, it is evident that as cartographic

projections, the sandpaintings of southern California are unique in native North America. The drawings simultaneously portray a three-dimensional map of natural features on earth integrated with a depiction of the visible heavens and the lower world, symbolized by the central hole or snakes supporting the earth. A fourth-dimensional aspect of time is suggested by the inclusion of different phases or aspects of the same heavenly body. Added to this is a fifth-dimensional aspect of spiritual creatures and forces imbued with the power of moral arbiters (Chungichnish figures will be discussed below); and the entire concept is laid out on one two-dimensional surface. The visual projection of this concept presupposes a complex level of abstract reasoning.

As instructional diagrams of geography and cosmology, the sandpaintings are similar to modern Euro-American charts and maps. There are, of course, differences in the geocentric projection of the universe by the California Indians and the modern, heliocentric world view.

Sandpaintings in Ceremonial Context

Amidst the topography were naturalistic or symbolic depictions of those animals and insects which had a particular religious function.⁹ Humans were included symbolically by a ceremony of expectoration in which the painting was "activated" at the same time as it was destroyed. Spiritual aspects of the human personality were also expressed. In the Luiseño boys' puberty sandpainting (Fig. 7), this was represented by the straight lines that divide the circle into quarters, which symbolized a magical method of gaining knowledge and mystical power called "the arms encircling the world."¹⁰ In the sandpainting made for the Luiseño girls' puberty ceremony (see Fig. 1, lower), the dark middle band of the three

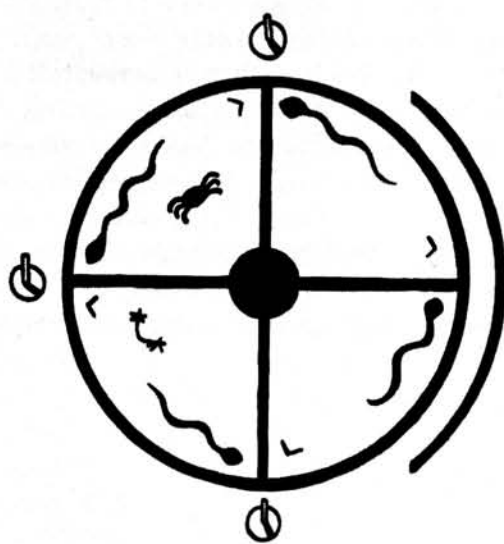


Fig. 7. Sandpainting used in Luiseño boys' puberty ceremony (after Kroeber 1908a:178).

concentric open circles was occasionally referred to as "our spirit or soul" (Kroeber 1925:662).

In the center of most sandpaintings was a circular depression, perhaps the most significant feature from the individual initiate's perspective. This hole was variously referred to as "the navel of the universe" or "the abode of the dead" and represented the grave (Kroeber 1908a:177, 1925:664).¹¹ It was here that members of the Chungichnish cult (discussed below) would sink if they disobeyed the tenets of the religion, and where the feathers of an initiate were buried during the funeral rite (Du Bois 1908a:92-93; Kroeber 1925:177, 179, 672).

In the boys' and girls' puberty initiations of many southern California tribes, a ritual took place at the culmination of instruction which marked the end of a period of fasting. After a dietary prohibition on the use of salt for a year, a lump of sage seed and salt was placed in the mouth of the candidate and he or she was given a long lecture. Kneeling before the inner circle with the

arms extended on both sides to support the body, the initiate spat the lump into the hole. The lecturer then examined it and determined by its appearance whether the listener had heeded his counsel or not. If it was dry, the counsel had been heeded and a long life was assured, but if wet, the listener had ignored the teachings and was urgently advised to "get on the right road." After the examination, the old men attending

the rite destroyed the sandpainting by pushing it from the edges into the hole. The sand was then swept up, carried away, and placed in a sacred place, so that the initiate would become permanently part of the picture, and so no one would desecrate the spot (Underhill 1941:38, 42). The ceremonial brush hut secluding the painting from unauthorized observers was also burned.¹²

The paintings thus became individualized

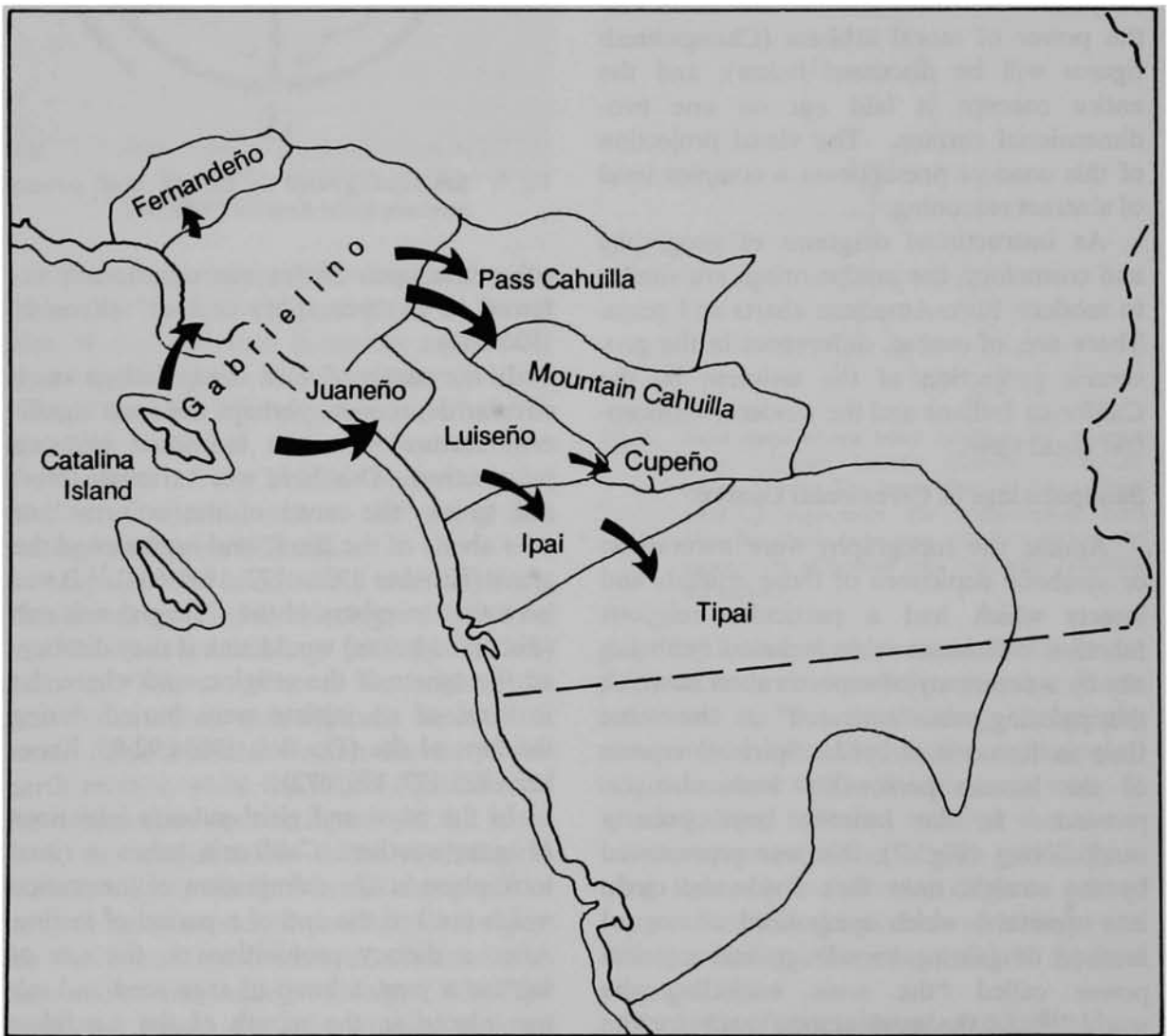


Fig. 8. Map showing the spread of Chungichnish and the southern California tribes that had sandpaintings. Map based on Kroeber (1925) and Heizer (1978:ix).

when activated by the lump of sage seed and salt which transformed the materials of the work into a personalized symbol of the self. Its periodic redrawing was a reaffirmation of the community world view which had to be re-presented to each subsequent generation in order to make them part of the cosmological scheme.

An identical rite of incorporation and destruction of a painting took place in another ceremony which was held by the Luiseño and Diegueño tribes. This was called the ant ordeal and followed the earlier ordeals of initiation for boys around eighteen years of age. The young men were forced to lie motionless in a pit filled with stinging ants or made to withstand a basket of the biting creatures on their backs. This was done to demonstrate the participant's fortitude and to ensure his future strength (Du Bois 1908a:91; Strong 1929:317; Underhill 1941:43).

CHUNGICHNISH AND THE HISTORY OF CALIFORNIA SANDPAINTINGS

According to the latest information, California belief systems south of the San Joaquin Valley seem to have formed several religious "complexes" in the protohistoric period. These complexes involved beliefs and ceremonial traits shared between contiguous tribal areas. Bean and Vane (1978:667-669) grouped participants into a Chumash *'antap* cult and a more southerly Chungichnish cult, while Hudson and Blackburn (1978) added a "northern complex" and cited the Gabrielino and Fernandefio as active in all three. Whatever the affiliations of particular tribes and the distribution of cults, it is clear from all ethnographic and historical sources that the execution of sandpaintings was strictly limited to members of the "southern complex" or Chungichnish cult (Fig. 8). This cult, which has been characterized by Du Bois

(1908a:97) as "a religion of fear," was spreading throughout southern California as Catholic missionaries arrived.

Certain elements of the Chungichnish legend have caused some scholars to see in it a fusion of Christianity with ideas involving earlier indigenous culture heroes along with "a thin veneer of older concepts shared to some extent by the northern complex Gabrielino and western members of the southern complex" (Hudson and Blackburn 1978:247). Others see Chungichnish as "a crisis cult developed in reaction to European diseases that were decimating Gabrielino and Luiseño groups prior to 1776" (Bean and Vane 1978:669), or as a result of contact with Christian deserters or castaways (White 1963). Religious practices associated with Chungichnish bore similarities to the northern complex and *'antap/yivar* cult in the use of *Datura* (jimsonweed),¹³ highly developed mourning and solstice rites, use of a sacred enclosure, ritual paraphernalia (Hudson and Blackburn 1978:242), and in the lecture and symbolism surrounding the sandpaintings (Oxendine 1980:46).

Chungichnish was the name of the founder of the religion, an all-powerful male culture-bringer variously conceived of as a prophet, raven, or even the squeal of a bat (Sparkman 1908:218; Waterman 1910:275-276; Strong 1929:314; White 1963; Heizer 1978:657). He taught his people various laws, rituals, and magical arts and insisted on a strict code of moral law, with infractions punishable by avengers responsible for misfortunes and infirmities.

Members were strictly held to a difficult, exemplary conduct of life, requiring obedience, self-sacrifice, and fasting (Du Bois 1908a:76). Failure entailed disaster at the hands of Chungichnish creatures, dangerous animals such as the rattlesnake, bear, or tarantula, stinging weeds, or spiritual aven-

gers. These creatures served as mnemonic devices for behavioral directives aimed at the young men and women being initiated into the cult. In the presentation of the sandpainting to the initiates, they were used to illustrate the moral imperatives of the tribe in a clear and specific lecture.¹⁴

Besides hostile animals, insects, plants, and spirits, Chungichnish avengers depicted in sandpaintings might be falling trees and crushing houses (Strong 1929:314), personified diseases (Du Bois 1908a:89), or heavenly bodies (Du Bois 1908a:97). The Sun, Sky, North Star, and Moon took turns in watching the doings of people. For example, the members of one tribe ate breakfast before dawn in order not to be reprimanded for gluttony by the sun.

Since sandpaintings were made by such a large number of tribes in the Southwest and northern Mexico, it seems reasonable to imagine a pre-Chungichnish tradition of sandpainting which was incorporated into the newer religion. Paintings may have been executed all over south, central, and eastern California in prehistoric times, but the evidence is either lost or was never collected. However, available literature invariably associates southern California groundpaintings in the historical period with the Chungichnish cult. The description of a sandpainting seen on Catalina Island by Vizcaño in 1602 (Venegas 1966:106-107) is not too early to be associated with a Catholic-influenced "crisis cult," since Cabrillo had been buried there over a half-century before. The question of whether a pre-Chungichnish sandpainting complex ever existed in California may never be resolved. But this should not rule out the possibility of an independent discovery of drawing in sand during historic times.

The Chungichnish religion originated among the inhabitants of Santa Catalina

Island and quickly spread southward around the time of intensive Catholic missionary activity (Kroeber 1908a:177; Strong 1929:117, 173; Johnston 1962:61-62; Bean 1976:413; Bean and Smith 1978:545; Hudson and Blackburn 1978:242). Tribes that did not receive the Chungichnish religion, such as the Serrano (Strong 1929:330; Johnston 1962:61), the Desert Cahuilla (Strong 1929: 82, 116), and the Kamia (Gifford 1931), did not make sandpaintings. Of those tribes that did, the associated ceremonial songs are in the Gabrielino language, clearly indicating their northern origin.¹⁵ Some tribes such as the Tipai of Baja California reported receiving the cult in the 1850s (see Fig. 9). This obvious southward expansion of the Chungichnish cult will become very important when we address the problem of diffusion from the Pueblo tribes of Arizona (see Fig. 8).

As the religion moved southward, it was grafted onto the pre-existing beliefs of the receiving tribes. Design elements within the sandpaintings themselves seem to document the historical spread of the practice. For example, the Cahuilla and Cupeño creator figures *Mukat* and *Temaiyauit* appear only in the sandpaintings of these two tribes¹⁶ (Fig. 10). The Ipai girls' puberty ceremony predates the importation of the Chungichnish religion with the result that more attention is paid to the traditional concerns of motherhood and physical well-being. They therefore do not employ a groundpainting (Waterman 1910:285-286; Kroeber 1925:662, 714). The Luiseño received the Chungichnish cult more directly and transformed the girls' puberty ceremony into one more nearly equated with that of the boys (Kroeber 1925: 716).

The relatively late adoption of the Chungichnish cult by the Tipai, well into the historic period, resulted in a curtailed

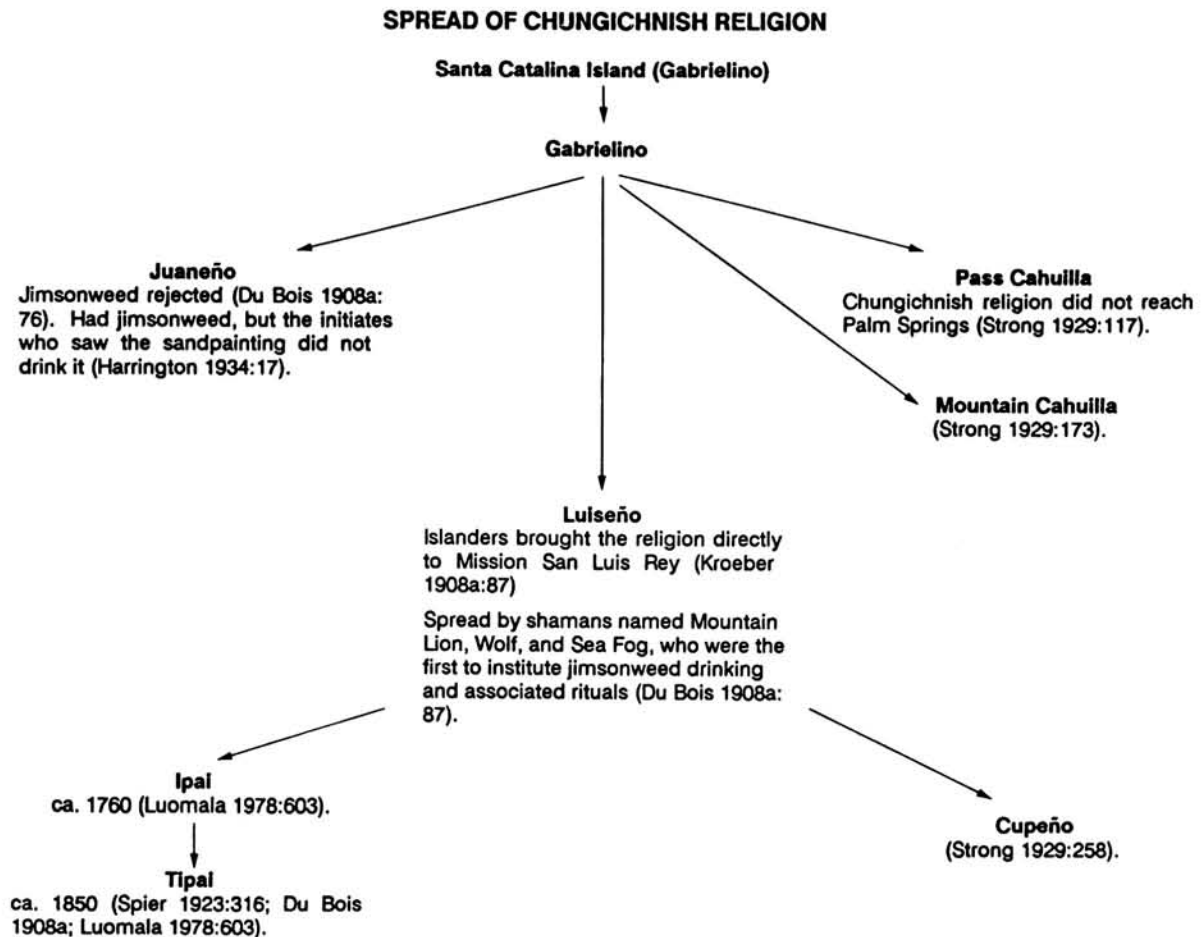


Fig. 9. Diagram showing the spread of Chungichnish religion.

religious observance. This is reflected in the sandpainting, which lacked the concentric astronomical symbolism and animal avengers central to the pictures of other tribes (Spier 1923:326-327) (see Fig. 3). Variation in the position of design elements occurred even at the village level (Waterman 1910:301) (see Fig. 2). Landscape features seen from individual settlements changed noticeably, and the ordering of astronomical bodies was subject to interpretation.

Stylistic dissimilarities in the sandpaintings seem curious when one considers the general preoccupation with accurate repetition of religious iconography within tradi-

tional societies. The Chungichnish cult spread very rapidly over a limited geographical area, which also would likely result in a more rigidly coherent iconography in the sandpaintings. Intertribal secular and ceremonial communication linked all peoples participating in the religion (Bean 1972:151-153; Blackburn 1976). One reason for the lack of a standardized or orthodox set of beliefs was the absence of a centralized political and religious power. Each clan inhabited a separate village and was said to have been a law unto itself. In the words of Sparkman (1908:215), "there was no government worthy of the name." California tribes also were



Fig. 10. Sandpainting made by the Cahuilla and Cupeño (after Smith and Turner 1975:15).

characterized by a rather experimental and individualistic approach to the supernatural (Bean 1976:413; Applegate 1977:105). This attitude was responsible for the speedy adoption of new religious concepts, but also legitimized selection of particular ideological viewpoints that could be rationalized within the pre-existing cultural framework. In the case of the sandpaintings, different design elements reflect the acceptance or rejection of specific tenets of the Chungichnish religion.

Before the sandpaintings ceased to be used for the instruction of the young in the late 1800s¹⁷, there were some interesting attempts at compromise within the Catholic religion. The Cahita of Sonora and Sinaloa substituted the Holy Trinity in place of the creator figures *Viriscua* and *Vairubi* in the sandpainting and pleaded with them for protection of the fields against floods and pests. Lions and tigers took the place of the ferocious creatures formerly symbolized by snakes and toads (Beals 1943:67-68). It has been said that Yaqui and Mayo dancing

in churches and traditional brush huts today is a survival of earlier dances around their sandpaintings, redirected by missionaries in the early seventeenth century (Beals 1945:202). Learning of the devil from the missionaries, the Luiseño identified him with the mythological *Towish* and had "songs and charms drawn on the ground as a form of exorcism" (Du Bois 1908a:142). Changes in the sandpainting could also come about through a local lapse in ritualistic accuracy. One consultant told Strong of a unique combination of a sandpainting and a *wanawut* figure (Strong 1929:314-315) (see note 8). Neophytes were made to leap from rock to rock within the sandpainting in a manner similar to ceremonial observance of the *wanawut* figure.

THE PROBLEM OF DIFFUSION

Kroeber (1925:661) summed up the feelings of most scholars toward the origin of the sandpaintings:

This sandpainting of southern California is unquestionably connected with that of the Pueblos and Navajos. There can also be little doubt that it originated in the much more complex ceremonialism of these southwestern nations.

This was in spite of the fact that Kroeber recognized that the California paintings contained a different subject matter, symbolism, and style, and that no trace of the custom existed among intervening tribes. Kroeber himself acknowledged the clear historical evidence for the southward spread of the practice from an island in the Pacific. However, he continued to hypothesize an older, pre-Chungichnish diffusion from the Southwest based solely upon the presence of trade items occurring infrequently in an archaeological context. The unequivocal assertion of this supposed Pueblo origin is

unfortunately perpetuated by modern writers (Johnston 1962:58; Grant 1965:90).

Contrary to such opinions, it is impossible to pinpoint the origin of the south coastal California painting in the Pueblo nations. Nor for that matter can one find its first stirrings in Hohokam, Mimbres, Chichimec, or Toltec times. Sandpaintings were documented in many cultures of the Southwest and northern Mexico, but their diffusion from a single ethnic or geographic center is unverifiable. The historical evidence for an eastward spread of the sandpainting throughout southern California from Catalina is more compelling than any supporting the idea of a western diffusion from the Pueblos. Other reasons for this argument are based on formal and geographic considerations.

Prehistoric and Historic Evidence

Prehistorically, there is "no parallelism between the impoverished archaeology of southern California and the varied and complex remains of the Basketmaker and Pueblo" (Beals 1944:192). A large number of cultural similarities between the more recent inhabitants of the two areas was gathered by Strong (1929:346). However, upon closer examination, they seem to be the same traits found widely scattered all over North and South America, such as ceremonial smoking of tobacco, consecration of fetishes with tobacco smoke, ritualistic employment of ants and eagles, the idea of dichotomy, sprinkling of meal at ceremonies, etc. A much more significant difference between Pueblo Indians and Californians was that the former were agriculturalists, whose culture reflected a completely different religious structure and set of concerns than hunter/gatherers.

In her comparative analysis of Pueblo and southern California sandpaintings, Underhill (1948) recorded the presence of the trait in nine Hopi and seven Zuni ceremonies. Al-

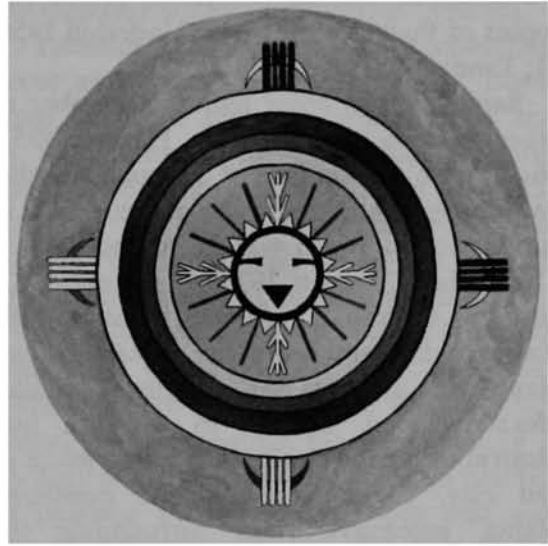


Fig. 11. Hopi sandpainting used in *Powamu* and *Powawalu* rites. This sandpainting bears the closest formal resemblance to sandpaintings in southern California. Comparisons with other illustrations in this paper should demonstrate just how dissimilar they are (after Voth 1901:Plate 42).

though most of the pictures described are completely different from their California counterparts, it must be admitted that one Hopi sandpainting bears remarkable similarity in design, practice, and intent¹⁸ (Fig. 11). Sandpaintings are used in several Zuni initiatory ceremonies, but they are connected with entrance into curing or sword-swallowing societies, and are not mandatory for all adolescents as in California (Underhill 1948:43). Pictures among both Pueblos and Californians are ceremonially destroyed, but this is the case for all sandpaintings with the single exception of those of the Cocopa (Harner 1953:19).

The Navajo are credited with making the most elaborate sandpaintings, which go through successive changes in a nine-day curing ritual.¹⁹ Various ideas concerning the origin of the works make it difficult to know if they were an indigenous part of

Navajo ceremonialism (Underhill 1941:41) or copies of Pueblo prototypes (Underhill 1956:41; Tanner 1973:54-56).

Sandpaintings occur among a number of other Arizona tribes as well. Harner (1953:16-17) gave descriptions of Yavapai, Apache, and Papago paintings.²⁰ Most were used in curing rituals, which was never the case in California (Goodwin 1938:33; Harner 1953:16-17). Of the non-Pueblo paintings, the Yavapai diagram bears the closest resemblance to California sandpaintings. Similar ideas included location in a brush hut, illustration of the spirit land, colors made of red clay, charcoal, ashes, and powdered plants, successive rings surrounding the painting, and a round, red spot in the center (Harner 1953:16).

Much is made of the fact that there was intermittent exchange between the Pueblos and California through the medium of Mohave traders. The Mohave brought red ochre and black blankets to the Chumash and accepted beads, rope, and Mexican blankets in return (Sample 1950:4; King 1976:305; Heizer 1978:691). Ethnohistorical references concerning Mojave desert guides (Sample 1950:4) and crude maps (Kroeber 1925:344) also exist. The tribe was thus thought of as likely candidates for the transference of the idea of sandpaintings. However, the Mohave themselves did not employ a sandpainting in ritual and could hardly be expected to be missionaries of a foreign ideology.

Trade items such as steatite, shells and pottery, which occur in an archaeological context, are also evidences of sporadic prehistoric contact (Sample 1950:5; Bean and Smith 1978:547). Sandpaintings, however, cannot be expected to have survived in the archaeological record. One need hardly state that utilitarian goods cannot in themselves be considered evidence for the ancient dif-

fusion of religious ideas involving sandpaintings.

Comparing sandpaintings to the giant prehistoric intaglios of the Colorado River, Harner called attention to the technological similarities of the two art forms. However, he found that tribes that made anthropomorphic gravel figures were unlikely to make sandpaintings (Harner 1953:19).

On the other hand, despite considerable cultural differences between aboriginal peoples of southern California and those of the Colorado River, they are remarkably similar in terms of mythology (Kroeber 1925:317; Heizer 1978:657). The Diegueño believed their stories about *Chaup*, the wonder-working boy, to have been borrowed from the Mohave (Kroeber 1925:715), and Du Bois discovered a Diegueño dance song in the Mohave language (Du Bois 1908b:228). Since the Mohave and Diegueño are both members of the Yuman language family, these connections can be presumed to have existed. Once again, however, the lack of a Mohave sandpainting tradition and the more likely western origin of the trait severely weaken the theory of Mohave transference of the Pueblo sandpainting.

More recent research gives occasional hints of sandpaintings among other Colorado River tribes, such as the Yuma (Smith and Turner 1975:15), Kamia, Halyikwamai, and Kohuana (Forbes 1965:40). However, both these references are made by authors working from the historical literature rather than in the field and they did not cite any sources. Forde flatly stated (1931:151) that "the ground painting is unknown on the lower Colorado River."

While records of sandpaintings are not available for the area between the Colorado River and desert tribes, they pick up again in eastern Baja California and coastal Sonora. The Cocopa (Gifford 1933:310) and

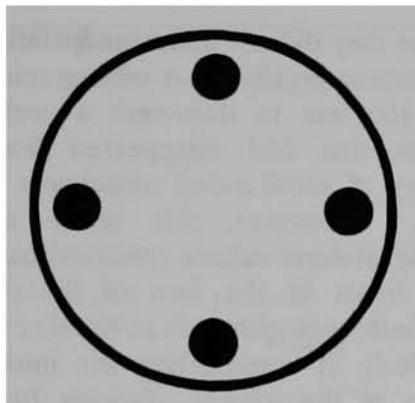


Fig. 12. Sandpainting made by the Cocopa, Akwa'ala, and Kiliwa of Baja California (Gifford 1933; Meigs 1939).

Kiliwa (Meigs 1939:64) made maps of the world used in shamanistic curing. The paintings of these three groups were exactly alike, in that they were limited to a representation of a sacred mountain at each of the four cardinal directions, surrounded by a circle that symbolized the world (Fig. 12). The animals that played such a large role in the Arizona, Pueblo, and California ground-paintings are not depicted in Baja California.

On the eastern side of the Gulf of California, the ancestors of the Yaqui and Mayo made sandpaintings more like the Chungichnish picture than that of any other non-California tribe. Two creator figures occupied the center of the diagram (Beals 1943:67; Perez de Ribas 1968:26-27), just as they did in the Catalina Island rendering (Du Bois 1908a:99; Venegas 1966:106-107) and the Cahuilla and Cupeño drawings (Strong 1929:256) (see Fig. 10). The rest of the space was filled with hostile animals. Even more remarkably, the diagram was used only for the boys' puberty ceremony. Besides a close similarity to California sandpaintings, the Cahita version also bore resemblances to Pueblo ideas. This is noticeable in the stalks of maize and other agricultural plants (Beals 1943:67), and the presence of the same animals which acted as patrons to Pue-

blo medicine societies (Underhill 1948:42).

Tantalizing allusions to sandpaintings occur as far south as Mesoamerica. Duran cited an Aztec story of an expedition sent by Moctezuma to the "land that had given birth to the Aztec people" (Duran 1964:133). Arriving in the province of Tula, they "traced magic symbols upon the ground, invoked the demons and smeared themselves with the particular ointments which wizards still use nowadays" (Duran 1964:134). Duran's reference to shamans painting their bodies after executing the sandpainting is paralleled in the southern California practice of painting the adolescent boys and girls immediately after revealing the mysteries of the sandpainting to them. The chronicler also stated that the magical practice was not discovered by the Spaniards because it was carefully hidden from them by the northern people. Brotherston (1974) gathered references to a ceremonial hill of sand that formerly stood in front of Mixtec and Aztec temples.²¹

Formal or Stylistic Evidence

The failure of formal or stylistic analysis to provide clues to the spread of sandpainting is indicated by the fact that the closest resemblance to the Luiseño painting illustrated by Sparkman (1908) is to be found in the deserts of central Australia.²² Arguments for such a diffusion would require a continuum of design motifs in which some centrally located group, midway between the Pacific and the Pueblos, would show some elements of both. That such a pattern occurs far to the south among the Cahita of southern Sonora and Sinaloa only serves to compound the complexities of the situation. In the area where the links would be expected to appear we see only the comparatively crude sandpaintings of the Akwa'ala, Cocopa, and Kiliwa, which are not paintings

at all, but merely four little humps of earth (Fig. 12). The conceptually similar twin creator figures in the widely separated Catalineño, Cahuilla, and Cupeño renderings differ sharply from the stylized animals and concentric circles of the Luiseño and Diegueño drawings, underlying the arbitrary method of comparing motifs in order to form an idea of interconnections among these tribes. No art historian would think of linking the elongated figures of the Navajo with the minimally rendered creatures of the California on exclusively formal grounds.

Another reason for doubting the ultimate Pueblo inspiration of California sandpaintings is the variability of religious ideas among tribes of different ethnic and linguistic families. Although they bear many similarities, Yuman religious notions are not identical to those of the Shoshonean or Chumashan groups (Hudson and Blackburn 1978). Selective use of ethnographic or archaeological data cannot be, as they sometimes have been, considered adequate support for theories of historical reconstruction. While trade goods such as beads, shells, and textiles may have crossed foreign territory in prehistoric times, this cannot in itself be considered evidence for the wholesale acceptance of religious practices by distant populations from merchant emissaries.

Finally, a closer examination of Pueblo and Californian practices involving sandpainting reveals completely different ritual contexts, purposes for execution, formal rendering, and symbols. Although not trackless, there is the formidable physical barrier of the Mojave desert separating Arizona painters from coastal Californians. Tribes inhabiting this arid land and the Colorado River Valley, such as the Desert Cahuilla, Kamia, Chemehuevi, Mohave, Yuma, Halchidhoma, and Kohuana, told anthropological fieldwork-

ers that they did not make sandpaintings. It is of course possible that ethnographers arrived too late to document a prehistoric practice that had disappeared from the memory of acculturated consultants in this region. However, this seems unlikely because Mohave culture remained comparatively intact at the turn of the century, when anthropologists such as Kroeber worked intensively at investigating the intellectual culture of the tribe.²³ Judging from the geographical distribution of tribes that produced sandpaintings (Fig. 13), one might conclude that the idea was transferred from Arizona to California via the Papago to the Cocopa to the Kamia and finally to the Ipai or Tipai. This hypothesis is weakened, however, by the observation that sandpainting in California seemingly was associated with a nativistic missionary movement in historical times which is known to have diffused northwest to southeast, not east to west.

In sum, there is no substantive evidence to support the notion that sandpainting had its origins in the Pueblos, especially in view of its appearance as far south as Oaxaca (see note 21). Rather, it was a pan-tribal trait widely distributed among the cultures of Mexico and the western United States, whose origin and dispersion cannot precisely be reconstructed with confidence. Even if sandpainting pre-dated the Chungichnish religion in California at some point in the distant past, the documentation of the diffusion of the practice to tribes who did not create sandpaintings at the time they received the Chungichnish religion indicates at least a reinvention rather than a resurfacing of an idea that had remained in abeyance among the people in question.

SOCIOLOGICAL FUNCTIONS

Various explanations of the function of

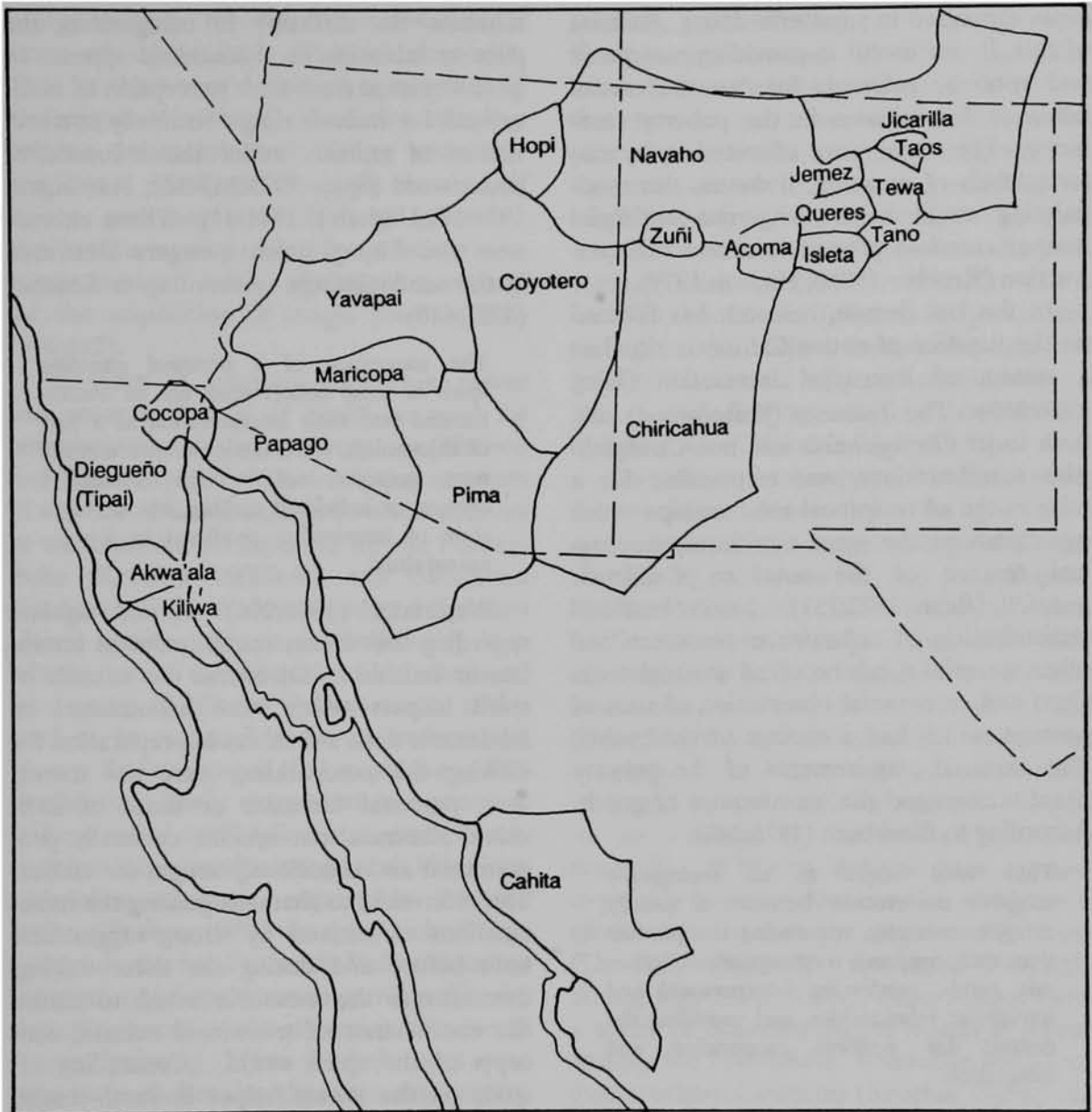


Fig. 13. Map showing tribes in southwest North America that made sandpaintings (after Murdock and O'Leary 1975:176).

the California sandpainting in its sociological context have been proposed. Johnston (1962) emphasized the constraints on behavior embodied in the instructions that accompanied the paintings. The maintenance of social order was fostered by the standards set and punishments meted out by Chungichnish

(Johnston 1962:60). This regime was seen by White (1963:137) as being subject to the cosmogony, the body of religious, moralistic, and social customs expressed in ideas about the acquisition of knowledge and power. The sandpainting is the most coherent synthesis of native California cosmogonic con-

cepts expressed in a material form. Because of this, it was useful in providing mnemonic and symbolic referents for "correct" social behavior for initiates in the puberty ceremony. For those more educated in its esoteric levels of meaning, however, the sandpainting could be a dangerous antisocial weapon, used to promote sickness and destruction (Kroeber 1908b; Hudson 1979).

In the last decade, research has focused on the function of native California ritual as a system of intertribal interaction (King 1976:289). The *Toloache* (jimsonweed) cult, both in its Chungichnish and non-Chungichnish manifestations, was responsible for a wide range of reciprocal relationships which was "perhaps the most significant sociological feature of the southern California people" (Bean 1972:151). Institutionalized redistribution of subsistence resources and other material goods occurred at ritual occasions and ceremonial observation of rites of passage, which had a distinct survival value. The material requirements of the puberty ritual encouraged the transference of goods. According to Blackburn (1976:242):

Thus what began as an ecologically adaptive convenience becomes a socially catalytic necessity, stimulating the production, exchange, and consumption of economic goods, reinforcing interpersonal and intergroup relationships, and providing the context for political cooperation and integration.

In rituals involving the sandpainting, these goods included food and money provided to participants from other clans and production of associated ceremonial paraphernalia.²⁴

Sources do not seem to agree on whether the sandpainting should be regarded as shamanistic in inspiration. Certainly shamans played major roles in all southern California ceremonies and were responsible for actually executing the sandpaintings. For some

scholars, the difficulty in categorizing the puberty initiation as shamanistic appears to have stemmed from their perception of motivations for hallucinating "societally correct" visions of animals under the influence of jimsonweed (Spier 1923:319-322; Harrington 1934:17; Underhill 1941:41). These animals were the Chungichnish avengers illustrated in the sandpaintings. According to Kroeber (1925:640):

The suggestion of a personal guardian spirit in these beliefs must not be overestimated into their interpretation as a part of shamanism, since the protective animals were acquired not through involuntary dreams or individual seeking, but during a state of intoxication produced in a communal ritual.

Waterman (1910:296) warned against regarding this dream requirement as totemism or fetishism. Of course the animals or spirit helpers which were hallucinated by adolescent datura-drinkers in preparation for viewing the sandpainting were not merely their personal fantasies or those of individual shamans, but specific culturally programmed and consciously sought-for visions. The references to shamans guiding the hallucinations of initiates by strong suggestions, both before and during the datura-taking, demonstrate the measures taken to assure the continuance of traditional cultural concepts of the spirit world. Concluding his study on the dream helper in south-central California, Applegate (1978:89) wrote:

The form and content of the individual's experience, though highly variable, are shaped by his expectations and ideals as set forth in myth and tradition in general. The experience of the dream helper is an internal objectification of these cultural patterns.

The presence of a number of elements in ceremonies accompanying the sandpaintings

argues strongly for their interpretation in terms of shamanism. This includes such ideas as the use of a hallucinogenic drug in "technique of ecstasy," invocation of spirit helpers, severe initiatory dietary and other restrictions designed in part to induce visions, and instruction in magic practices. The lecture accompanying the paintings was, at one level, an outline of conduct necessary for the acquisition of magic power (Bean 1976:412).

In much of southern California, power was amoral, that is, it could be used for constructive or destructive purposes (Hudson and Underhay 1978:43). Intriguing accounts of the use of sandpaintings to cause sickness or earthquakes are reported for the Fernandeano (Kroeber 1908b:40) and Gabrielino (Hudson 1979). A dozen sculpted figurines placed upside-down on a sandpainting in a remote part of Catalina Island were believed by a group of Mission Indians on the mainland to be responsible for an outbreak of disease that decimated their population. The deaths were finally stopped when a group of Indians sailed to Catalina in a plank canoe, destroyed the sandpainting, and killed the malevolent shamans responsible for the action (Hudson 1979). In the vicinity of the mission in the San Fernando Valley, shamans believed they could cause earthquakes by stretching ropes made of human hair across the sandpainting. When the hair ropes were vigorously shaken by the shamans holding them, the ground was thought to shake accordingly (Kroeber 1908b).

SIMILARITY OF SANDPAINTING TO OTHER ART FORMS OF ABORIGINAL CALIFORNIA

Since sandpaintings are more fully documented in the ethnological literature than other pictographic art forms of southern California, investigators concerned with

rock art, gravel drawings, or rock alignments have sought to draw formal comparisons between these media. Harner (1953) found that few of the tribes who produced the pictographic art in scraped gravel, such as the ancestors of the Yumans, were likely to employ sandpaintings in ritual. The geographical distributions of the two media were mutually exclusive (Harner 1953:19). Davis and Winslow (1965:20) linked the gravel renderings of the Mojave Desert with rain and fertility based on a supposed resemblance to snakes and flowing water, a concern not manifested in California sandpaintings.

The most recent survey of North American rock art states that "the California sandpainting . . . designs bear no formal relationship to those of the pictographs" (Wellmann 1979:72). However, in southern California, some sandpaintings and rock paintings are in fact functionally and formally related. For instance, in most of the Chungichnish ceremonies, a race was run to complete the initiation requirements in which male and female candidates painted designs on some rocks at the end of the race course.²⁵ Different designs were applied every day for up to four months, which were identical to the face paintings used in ritual (Du Bois 1908a:96; Sparkman 1908:225; Strong 1929:257). Among these designs were a series of diamond-shaped markings representing the rattlesnake, frequently found all over southern California (Kroeber 1908a:176; Strong 1929:299) (Fig. 14). Representations of the diamond-backed rattlesnake were one of the central features of the Diegueño sandpainting (Waterman 1910:303). One of the principal reasons for Diegueño rituals in general was to prevent snake bites caused by offending the *awik* creatures, the tribal equivalent of the Chungichnish avengers (Waterman 1910:276).

The Chumash and Yokuts also used jim-

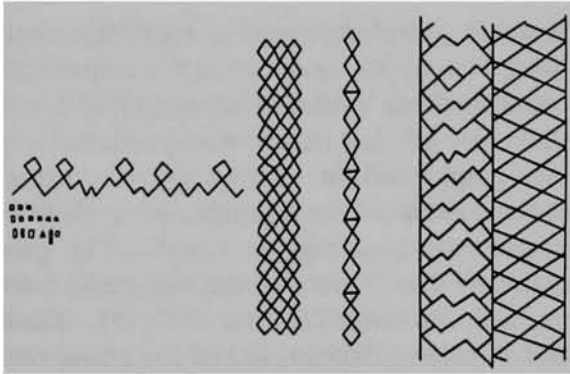


Fig. 14. Rock paintings made after the footrace concluding the Luiseño girls' puberty ceremony. The diamond-shaped patterns symbolize rattlesnakes (Kroeber 1908a:175).

sonweed in ceremonies related to, but not part of, the Chungichnish religion. Wellmann (1979:33) proposed that the presence of snakes in Chumash and Yokuts rock art is linked with a tribal myth of two serpents supporting the world.²⁶ Other designs made on the rocks at the end of the puberty initiation were signs that another tribal member had been added to the band and would be "as healthy, upright and industrious as the people could make them" (Underhill 1941:38). Rock paintings in this case had the same motivations as sandpaintings in that both sought to guarantee future success through obedience to tribal moral standards. On the other hand, the fact that the sandpaintings were destroyed after being used in instruction and were not intended for outside eyes seems to argue against the type of conception inherent in the permanence of most rock paintings.²⁷

Instead, sandpaintings can be categorized as falling within a complex of attitudes toward the production of art in southern California that regarded many objects intended for use in a particular ceremony as ephemeral. These artifacts were meant to serve a temporary role in ritual and were then destroyed. Among the objects were

life-sized, naturalistically rendered statues of wicker and cloth, intended to represent recently deceased individuals (Strong 1929: 120-130, 264-268). At the culmination of semi-annual mourning ceremonies held in their honor, these figures and almost all of the departed persons' personal possessions, including their houses, were burned. In northern and central California, guests attending a funeral destroyed spectacular amounts of food and property (Kroeber 1925: 360, 481, 589, 609). Carefully woven and finely decorated baskets and strings of shell money were tossed into the flames. Another ephemeral art work was the *wanawut*, a long mesh of milkweed or nettle twine, the size and shape of a man. This figure was laid in a trench said to represent the grave and was the subject of a ceremony of prognostication in the Luiseño boys' puberty ceremony. At the close of this event, the men and boys pushed the earth back into the trench, burying the figure (Kroeber 1925:671). Large vessels found in some southern California archaeological sites often have deliberately punched holes in the bottom which render them nonfunctional (Rogers 1929:219-220).

This purposeful destruction of objects in ceremonial and mortuary contexts may indicate a conception of art in which the large amount of time invested in the manufacture of the art work is more or less equal to the esteem in which it is held as sacrifice. At another level, similar motivations may lie behind the demolition of a deceased individual's personal belongings by their relatives and the obliteration of the sandpainting after the divination rite of initiates in the puberty ceremony. In both cases, the identification of a particular art work with a particular individual is considered too close to allow its possible desecration by unauthorized viewers or handlers. It is no wonder then that the southern California

idea of ephemeral art, along with the rapid dissolution of the culture under the mission system, has led to the underrepresentation of whole classes of art works in museums and private collections, and in the art historical literature. It is only by making an effort to synthesize all known data on these objects, which have disappeared under the willful intent of their creators, that a fair picture will emerge of the richness and variety of native southern California art.

SUMMARY AND CONCLUSIONS

Sandpaintings of southern California have been shown to be ritualistic maps of the universe that incorporate a rich symbolism. This symbolism involves, at various levels, colors and materials, maps of the heavens and earth, living creatures including humans, and moral instructions deemed necessary in the education of the young. They were most frequently employed in a highly secretive psychedelic puberty initiation in order to give both geographical and behavioral instruction to male and female initiates. At other times, they could be used in ceremonies marking adulthood or death, and malevolently, in witchcraft. A survey of ethnographic and ethnohistorical accounts reveals a probable association of the California sandpainting with the Chungichnish cult. If this is so, then it is possible to trace the development of the sandpainting among the Gabrielino of Santa Catalina Island in the protohistoric period and its subsequent spread southward to other tribes in the late eighteenth century. A review of the literature on all other sandpaintings known from Baja California, the Colorado River, northern Mexico, Arizona, and the Pueblos does not support Kroeber's hypothesis that the paintings originated in the Southwest.

Various theories about the function of sandpaintings in their sociological context

have here been reviewed, such as those referring to the paintings' role in reinforcing tribal values or fostering reciprocal ceremonial exchange, and those referring to the question of the art's shamanistic inspiration. Finally, the forms and symbolic meanings of sandpaintings and those of other art forms of aboriginal southern California were compared.

The purpose of this study was to demonstrate that the art of aboriginal California is far richer than has generally been supposed. In-depth examinations of southern California art forms are few in number and usually limited to rock paintings and basketry designs. Information on the sandpaintings of California has never been synthesized as a basis for examining their historical and artistic dimensions and contexts. An increasing number of publications in the last two decades (Heizer and Clewlow 1973; Meighan and Pontoni 1978) have expanded our knowledge of the distribution of petroglyphs in California, but an almost complete lack of ethnographic data limits their conclusions on the native meaning of the art form. Scholars have begun to re-examine the ritual and functional contexts of aboriginal California art after the recent renewal of interest in the field caused in large part by the discovery of the copious fieldnotes of John P. Harrington (Hudson and Underhay 1978; Hudson et al. 1979; Hudson and Lee 1981; Lee 1981). In contrast, the data on sandpaintings present a valuable source of ethnological information on native mythology, cosmology, cartography, and pedagogy, as well as artistic symbolism.

The general attitude toward ethnographic California art forms, with the exception of basketry and petroglyphs, has been one of neglect. In general, studies of aboriginal art have been dominated by the desire to document collectible or observable art forms,

which California sandpaintings are not. The purposeful destruction of the paintings by their makers along with the code of secrecy surrounding their execution and the ephemeral nature of the medium itself have prevented many scholars in the non-European arts from becoming aware of their existence. The marked lack of interest shown by art historians in California sandpaintings in contrast to the intensively researched Navajo and Pueblo sandpaintings is perhaps due to the absence of an introductory study of the California art form.

NOTES

1. A photograph of a Luiseño sandpainting was included in a monograph by Du Bois (1908a: Fig. 1b). According to the author, it was made as a model for photographic purposes and was not connected with any ceremony. For convenience in photography, it was done chiefly in white. Thus a photograph of an actual sandpainting *in situ* remains to be published.

2. The color red was gathered from iron oxide occurring at sacred springs (Waterman 1910:294; Strong 1929:175, 256), from red ochre deposits (Benedict 1924:390), and from red seeds and flowers (Spier 1923:320). Black was made from charcoal (Kroeber 1908a:177; Strong 1929:256), graphite (Strong 1929:175), or black seeds (Spier 1923:319; Strong 1929:256). White could be made from a vine (Spier 1923:319), ashes (Kroeber 1908a:177; Villasenor 1963:11), powdered clay (Waterman 1910:296-297), white sand (Strong 1929:256), or soapstone (Waterman 1910:298). Gray came from ashes (Strong 1929:314) or flax seeds (Spier 1923:320). More rarely, yellow seeds, pollen, or bark are mentioned.

3. Tribes on the periphery of southern California which employ sandpaintings in ritual seem to exhibit traces of a color directional symbolism in certain myths, yet most tribes had no knowledge of such a system at contact. On the Ipai, see Waterman (1908) and Luomala (1978:604). The Kiliwa (Meigs 1939:14,65) and the Cocopa (Gifford 1933:287) of Baja California in particular seem to have this trait. Among the Luiseño, hair ropes instead of colors are associated with

the cardinal points (Wallace 1978:643). A reconstruction of a Luiseño color/directional system limited to east and west only was made by Applegate (1979:78) by associating ritual and mythic elements.

4. Paha meant "shaman" and "red racer snake" in the Luiseño (Johnston 1962:71-72), Cahuilla, Cupeño (Strong 1929:252), and Chumash languages (Hudson and Blackburn 1978).

5. In the Cupeño girls' initiation, young women were painted with black and white clay after viewing the sandpainting, which included depictions of the creator figures *Mukat*, rendered in light colors, and *Temaiyauit*, painted in black (Hill and Nolasquez 1973:34a, 35a, 101).

6. Evidence for aboriginal southern California calendars in the form of names of the months is available for a number of tribes: Chumash (Hudson and Underhay 1978:126-129); Gabrielino (Bean and Smith 1978:548); Luiseño (Du Bois 1908a:165); Juaneño (Kroeber 1925:644); Cupeño (Strong 1929:253); and Ipai (Du Bois 1908a:165). Similar evidence exists for other tribes: the northern Baja California Tipai (Spier 1923:341); Akwa'ala (Gifford and Lowie 1928:342); Cocopa (Gifford 1933:287). For the Mohave and a synthesis of areal affinities, see Spier (1955).

The function of time-keeping was to regulate not only ritual activity, but also economic, legal, social and community affairs. The calendar, based upon interaction with and interpretation of powerful celestial supernaturals and understood only by the elite, provided divine sanction for many aspects of communal behavior [Hudson et al. 1979:52].

7. Some Kamia constellation maps are illustrated in Gifford (1931:68-69). A Gabrielino myth recorded by Reid tells of a visitor to the Land of the Dead across the Western Sea who was instructed to draw a map on the ground showing the exact relationship of Polaris and the constellation Ursa Major. Although the visitor had no specialized astronomical training, he was able to pass the test because of having witnessed the creation of sandpaintings in the past (Hudson and Underhay 1978:99, 130). The country across the Western Sea is probably a mythological land, but could also be Santa Catalina Island, the

point of origin and center par excellence of ritual activity involving sandpainting.

8. Stylistically simple representations of lying human figures were worshipped by the Pima at Sacaton (Russell 1908:254) and by southern Californians in the form of the *wanawut* figure. Giant ground drawings of the Colorado River also appear in this form (Setzler 1952) which the Mohave have associated with a creation myth (Harner 1953:6-7). The *wanawut* figure was made from twined milkweed and represented the creator *Wiyot*. It also meant "soul" or "spirit" and "Milky Way" where men's souls go when they die. Several large stones were placed upon the body of the figure and initiates were obliged to leap from rock to rock without slipping in order to predict future success or longevity. Descriptions of this ritual exist for various southern California tribes: Luiseño (Du Bois 1908a:85-86; Kroeber 1908a:179; Underhill 1941:41); Juaneño (Strong 1929:315); Cupeño (Strong 1929:260); Ipai (Waterman 1910:304); and Tipai (Spier 1923:320).

9. According to Waterman, the Chungichnish animals of the Luiseño were the coyote, wolf, bear, tarantula, and raven. Other animals such as the skunk, wildcat, raccoon, crane, or owl were never drawn, although they were native to the area (Waterman 1910:7). The Chungichnish creatures were indicated by a symbol consisting of a line bent at a right angle (see Figs. 1a, 2a, and 7). It is possible that the animal avengers represented the metamorphoses of some of the First People of mythical accounts who ascended to the sky to form stars and constellations. The identification of these Sky People with modern Western star names has been admirably reconstructed by Hudson and Underhay (1978:100-113). If the Sky People are represented by symbols in sandpaintings, then some conventionalized signs such as the right angle might indicate stars as well as animals. Likewise, some depictions of stars by dots or mounds might also represent animals or Chungichnish avengers.

10. The symbolism of the arms about the world refers to a shamanistic technique of acquiring magic power which was practiced as far away as the Yuman tribes of the Colorado River

(Toffelmeier and Luomala 1936:198). During a conventionalized dream experienced under the influence of the jimsonweed, the initiate puts his arms around the world and "sees everything in it," interpreted to mean that he encompasses all knowledge.

11. The Tipai groundpainting was not enclosed by a circle, nor did it include animals. Instead, the various geographical features were spread out upon the ground. The hole referred to here was in a separate, nearby location (Spier 1923:32) (see Fig. 3).

12. This ritual was basically the same in all tribes in which it occurred: Luiseño (Du Bois 1908a:83; Sparkman 1908:221; Kroeber 1925:674; Strong 1929:298-299; Underhill 1941:38, 43; Johnston 1962:62); Cupeño (Strong 1929:256-260; Hill and Nolasquez 1973:34a, 35a); and Ipai (Waterman 1910:304). Most authors feel that similar rites took place in adjacent tribes, even if the direct evidence has been lost or forgotten: Gabrielino (Johnston 1962:62); Serrano (Strong 1929:31).

13. Descriptions of jimsonweed ceremonies from several groups are available: Central Miwok (Bean and Vane 1978:669); Kitanemuk (Blackburn and Bean 1978:565-566); Serrano (Strong 1929:30-31); Chumash (Applegate 1975; Blackburn 1975); Yokuts (Wellmann 1979:74); Kawaiisu (Zigmond 1977:62); Cahuilla (Hooper 1920:345-347); Pass Cahuilla (Strong 1929:116-117); Mountain Cahuilla (Kroeber 1908c:65-66; Strong 1929:172-173); Luiseño (Du Bois 1908a:77-83; Kroeber 1908a:176-177; Sparkman 1908:221; Underhill 1941:40-41); Juaneño (Strong 1929:35; Harrington 1934:17; Boscana 1969:256-270); Ipai (Waterman (1910:294-299); Tipai (Spier 1923:316-321); Akwa'ala (Gifford and Lowie 1928:344); and Kiliwa (Meigs 1939:64). Descriptions of jimsonweed ceremonies outside California are also available: Zuni (Stevenson 1915:41, 47, 90-91); Virginia (Schleiffer 1973:129-130); Colombia (Reichel-Dolmatoff 1975:15, 54); and Mexico, Colombia and Peru (Schleiffer 1973:116-124, 127-128).

Girls' ceremonies substituted the swallowing of a ball of tobacco in place of the jimsonweed used in boys' initiations in southern California (Kroeber 1908a:176; Johnston 1962:63).

14. The following is a literal translation of part of the lecture or counsel given to Luiseño boys over the *torohaish*, or groundpainting (Sparkman 1908:223):

See these, these are alive, this is bear panther; these are going to catch you if you are not good and do not respect your elder relations and grown up people. And if you do not believe, these are going to kill you; but if you do believe, everybody is going to see your goodness, and you will then kill bear panther. And you will gain fame and be praised, and your name will be heard everywhere.

See this, this is the raven, who will shoot you with bow and arrow, if you do not put out your winnowing basket. Hearken; do not be a dissembler, do not be heedless, do not eat food of overnight (i.e., do not secretly eat food left after the last meal of the day [a Luiseño taboo]). Also you will not get angry when you eat, nor must you be angry with your elder relations.

The earth hears you, the sky and wood-mountain see you. If you will believe this you will grow old. . . .

15. Chungichnish songs of the following tribes were in the Catalina Island or Gabrielino language: the Juaneño (Harrington 1934), the Mountain Cahuilla (Strong 1929:173), and the Luiseño (Waterman 1910:294; Roberts 1933). Songs of tribes further south were in the Luiseño language, reflecting that tribe's status as intermediaries in the spread of the religion. This included the Cupeño (Strong 1929:258) and the Ipai (Waterman 1910:293).

16. However, it is interesting that the only other appearance of human figures (in both cases also double figures) are in the oldest reported sandpaintings. These are the Catalina Island (Du Bois 1908a:98-99) and the Cahita sandpaintings (Beals 1943:66-67).

17. The sandpainting was discontinued in the Luiseño boys' ceremony around 1860, but continued to be used in female initiations until 1890 (Du Bois 1908a:77; Sparkman 1908:225). The Cahuilla painting ended about 1860 at San Bernardino (Strong 1929:175). The funerary sand-

painting still survives (Villasenor 1963:11; Bean and Vane 1978:671).

18. The Hopi *Powamu* and its introductory rite *Powawalu* were sometimes held for the initiation of children. They included a sandpainting representing the world and children were made to undergo ordeals associated with the works. The painting is dissimilar in other details such as agricultural symbols (Underhill 1948:44) (see Fig. 11).

19. Brief descriptions of Navajo sandpaintings can be found in Underhill (1956:51) and Tanner (1973:53-56). Hopi and Zuni paintings are described by Harner (1953:18) and Underhill (1948:40-45).

20. More specifically, these are the Papago, and Kikimai Papago, the Yavapai and Northeastern Yavapai, and certain Apache tribes, including the Northern Tonto, San Carlos, Cibecue, White Mountain, Chiricahua, and Jicarilla. Apache tribes who do not make sandpaintings are the Warm Springs, Huachuca Mountain, Mescalero, Lipan, Llanero, and Ollero (Harner 1953:17).

21. In Oaxaca, the Chatino (DeCicco 1969:364) and the Cuicatec (Weitlaner 1969:446) are two tribes which continue to make sandpaintings. Both tribes make pictures of the cross in sand, charcoal, and leaves or flowers, to use in funerary rituals. Because of the small amount of ethnographic documentation of these peoples, it is not known if the sandpaintings of the Chatino and Cuicatec are aspects of indigenous material culture which predate the heavy Christian influences they now show.

22. One of the groundpaintings created by the Aranda of central Australia for the instruction of the young includes three concentric circles colored red, black and white. In the center is a hole which is called *Tjalupalupa*, or navel (Roheim 1945:102-103). Despite these interesting similarities to sandpaintings in California, absolutely no connection is implied.

23. Kroeber sent ethnographers all over California in an effort to determine the distribution of individual traits which are recorded and synthesized in the Culture Element Distribution studies. Because of the method of recording the presence or absence of particular traits, based on a checklist of predetermined culture elements

that could be amended in the field, we can be certain that anthropologists inquired into the existence of sandpaintings among these tribes. The cross-checking of culture traits by different fieldworkers backed up by a search of the literature makes it fairly clear that anthropologists were unable to discover evidence of a sandpainting among the tribes of the eastern Mojave Desert or along the lower Colorado River between California and Arizona (Klimek 1935:45; Drucker 1937).

24. Associated ceremonial paraphernalia included eagle feather headdresses and dance skirts, decorated toloache mortars, baskets, pestles and clay cups, the ceremonial quiver (Strong 1929:117; Boscana 1969:259-260), ceremonial blades of obsidian, clay figurines (Bean and Shippek 1978:553), sacred wands, shoulder bands (Du Bois 1908a:98), pipes, sucking tubes (Heye 1927), and associated magical stones and crystals.

25. References to rock paintings done after puberty initiations are available for different groups: Luiseño (Du Bois 1908a:96; Sparkman 1908:224-225; Strong 1929:299; Underhill 1941:38); Cupeño (Strong 1929:256); and Ipai (Waterman 1910:293).

26. Great snakes supporting the middle world, or earth, is a concept found among most southern California tribes. One of Harrington's informants reported that the Gabrielino addressed songs to the *panahutr*, two large snakes who lived under the earth and could cause earthquakes by their rolling or twisting movement (Hudson and Blackburn 1978:232). Since two large snakes figure in the Fernandeano and Gabrielino sandpaintings, one might wonder whether singing was one of the methods used by shamans to cause earthquakes as they stood about the ground drawing. The account by Kroeber (1908b) concerning the Fernandeano refers to the shaking of human hair ropes as the final catalyst and does not mention snakes, although it is possible that the twisted ropes symbolized the *panahutr* and the movement of the ropes was akin to the movement of snakes. The Catalina Island painting described in the Harrington notes contained depictions of snakes, and ritual activity with a malevolent intent was initiated by

"shouting" as opposed to singing.

27. A few rock paintings were also purposely destroyed by the Indians. One Chumash story tells of a Gabrielino sorcerer who painted figures on a tablet or stone with the intention of causing a drought. In order to halt the resulting famine, some other wizards were forced to neutralize the rock painting by throwing it into the water (Blackburn 1975:276).

REFERENCES

Applegate, Richard B.

1975 The Datura Cult among the Chumash. *The Journal of California Anthropology* 2(1):7-17.

1977 Native California Concepts of the Afterlife. In: *Flowers of the Wind, Papers on Ritual, Myth, and Symbolism in California and the Southwest*, T. C. Blackburn, ed., pp. 105-109. Socorro, NM: Ballena Press Anthropological Papers No. 8.

1978 *ʔAtishwin: the Dream Helper in South-Central California*. Socorro, NM: Ballena Press Anthropological Papers No. 13.

1979 The Black, the Red, and the White: Duality and Unity in the Luiseño Cosmos. *Journal of California and Great Basin Anthropology* 1(1):71-78.

Beals, Ralph L.

1943 The Aboriginal Culture of the Cáhita Indians. *Ibero-Americana* 19.

1944 Northern Mexico and the Southwest. In: *El Norte de México y el Sur de Estados Unidos: Tercera Reunión de Mesa Redonda sobre Problemas Antropológicos de México y Centro América*, Sociedad Mexicana de Antropología, pp. 191-199. Mexico: Castillo de Chapultepec.

1945 The Contemporary Culture of the Cahita Indians. *Bureau of American Ethnology Bulletin* 142.

Bean, Lowell J.

1972 *Mukat's People: The Cahuilla Indians of*

- Southern California. Berkeley: University of California Press.
- 1976 Power and its Applications in Native California. In: *Native Californians: A Theoretical Retrospective*, L. J. Bean and T. C. Blackburn, eds., 407-420. Socorro, NM: Ballena Press.
- Bean, Lowell J., and Florence C. Shipek
1978 Luiseño. In: *Handbook of North American Indians*, Vol. 8, California, R. F. Heizer, ed., pp. 550-563. Washington: Smithsonian Institution.
- Bean, Lowell J., and Charles R. Smith
1978 Gabrielino. In: *Handbook of North American Indians*, Vol. 8, California, R. F. Heizer, ed., pp. 538-549. Washington: Smithsonian Institution.
- Bean, Lowell J., and Sylvia B. Vane
1978 Cults and their Transformations. In: *Handbook of North American Indians*, Vol. 8, California, R. F. Heizer, ed., pp. 662-672. Washington: Smithsonian Institution.
- Benedict, Ruth F.
1924 A Brief Sketch of Serrano Culture. *American Anthropologist* 26(3):366-397.
- Blackburn, Thomas C.
1975 *December's Child: A Book of Chumash Oral Narratives*. Berkeley: University of California Press.
1976 Ceremonial Integration and Social Interaction in Aboriginal California. In: *Native Californians: A Theoretical Retrospective*, L. J. Bean and T. C. Blackburn, eds., 225-243. Socorro, NM: Ballena Press.
- Blackburn, Thomas C., and Lowell J. Bean
1978 Kitanemuk. In: *Handbook of North American Indians*, Vol. 8, California, R. F. Heizer, ed., pp. 564-569. Washington: Smithsonian Institution.
- Boscana, Gerónimo
1969 *Chinigchinich: A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta-California*. A. Robinson, transl. In: *Life in California*, A. Robinson, ed., pp. 227-341. New York: Da Capo Press.
- Brotherston, Gordon
1974 *Sacred Sand in Mexican Picture-Writing and Later Literature*. *Estudios de Cultura Nahuatl* 11:303-309.
- Davis, Emma L., and Sylvia Winslow
1965 Giant Ground Figures of the Prehistoric Deserts. *Proceedings of the American Philosophical Society* 109(1):8-21.
- DeCicco, Gabriel
1969 The Chatino. In: *Handbook of Middle American Indians*, Vol. 7, Robert Wauchope, ed., pp. 360-366. Austin: University of Texas Press.
- Drucker, Philip
1937 Culture Element Distributions, V: Southern California. *University of California Anthropological Records* 1(1).
- Du Bois, Constance G.
1908a *The Religion of the Luiseño Indians of Southern California*. University of California Publications in American Archaeology and Ethnology 8(3).
1908b *Ceremonies and Traditions of the Diegueño Indians*. *Journal of American Folklore* 21:228-236.
- Duran, Diego
1964 *The Aztecs, the History of the Indies of New Spain*, transl. by Doris Heyden and Fernando Horcasitas. New York: Orion Press.
- Forbes, Jack D.
1965 *Warriors of the Colorado: The Yumas of the Quechan Nation and Their Neighbors*. Norman: University of Oklahoma Press.
- Forde, C. Daryll
1931 *Ethnography of the Yuma Indians*. University of California Publications in American Archaeology and Ethnology 28(4).

- Gifford, E. W.
 1931 *The Kamia of the Imperial Valley*. Bureau of American Ethnology Bulletin 97.
 1933 *The Cocopa*. University of California Publications in American Archaeology and Ethnology 31(5).
- Gifford, E. W., and R. H. Lowie
 1928 *Notes on the Akwa'ala Indians of Lower California*. University of California Publications in American Archaeology and Ethnology 23(7).
- Goodwin, Grenville
 1938 *White Mountain Apache Religion*. *American Anthropologist* 40(1):24-37.
- Grant, Campbell
 1965 *The Rock Paintings of the Chumash*. Berkeley: University of California Press.
- Harner, Michael J.
 1953 *Gravel Pictographs of the Lower Colorado River Region*. Berkeley: University of California Archaeological Survey Reports No. 20:1-29.
- Harrington, John P.
 1939 *A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southern California*. *Smithsonian Miscellaneous Collections* 92(4).
- Heizer, Robert F.
 1971 *Aboriginal California and Great Basin Cartography*. In: *The California Indians: A Sourcebook*, R. F. Heizer and M. A. Whipple, eds., pp. 459-463. Berkeley: University of California Press.
 1978 *Mythology: Regional Patterns and History of Research*. In: *Handbook of North American Indians*, Vol. 8, California, R. F. Heizer, ed., pp. 654-657. Washington: Smithsonian Institution.
- Heizer, Robert F., and C. W. Clewlow
 1973 *Prehistoric Rock Art of California*. Ramona, CA: Ballena Press.
- Heye, George G.
 1927 *Shaman's Cache from Southern California*. *Museum of the American Indian, Indian Notes* 4(4):315-323.
- Hill, Jane H., and Rosinda Nolasquez (eds.)
 1973 *Mulu'wetam: The First People; Cupeño Oral History and Language*. Banning, CA: Malki Museum Press.
- Hooper, Lucile
 1920 *The Cahuilla Indians*. University of California Publications in American Archaeology and Ethnology 16(6).
- Hudson, Travis
 1979 *A Rare Account of Gabrielino Shamanism from the Notes of John P. Harrington*. *Journal of California and Great Basin Anthropology* 1(2):356-362.
- Hudson, Travis, and Thomas C. Blackburn
 1978 *The Integration of Myth and Ritual in South-Central California: the "Northern Complex"*. *The Journal of California Anthropology* 5(2):225-250.
- Hudson, Travis, and Ernest Underhay
 1978 *Crystals in the Sky: An Intellectual Odyssey Involving Chumash Astronomy, Cosmology, and Rock Art*. Socorro, NM: Ballena Press Anthropological Papers No. 10.
- Hudson, Travis, Georgia Lee, and Ken Hedges
 1979 *Solstice Observers and Observatories in Native California*. *Journal of California and Great Basin Anthropology* 1(1):39-63.
- Hudson, Travis, and Georgia Lee
 1981 *Function and Purpose of Chumash Rock Art*. *The Masterkey* 55(3):92-100.
- Johnston, Bernice E.
 1962 *California's Gabrielino Indians*. Los Angeles: Southwest Museum.
- King, Chester
 1976 *Chumash Inter-Village Economic Exchange*. In: *Native Californians: A Theoretical Retrospective*, L. J. Bean and T. C. Blackburn, eds., pp. 289-318. Socorro, NM: Ballena Press.

- Klimek, Stanislaw
 1935 Culture Element Distributions: I. The Structure of California Indian Culture. University of California Publications in American Archaeology and Ethnology 37(1).
- Kroeber, Alfred L.
 1906 Two Myths of the Mission Indians of California. *Journal of American Folklore* 19:309-321.
 1908a Appendix II, Notes on the Luiseños. University of California Publications in American Archaeology and Ethnology 8: 174-186.
 1908b A Southern California Ceremony. *Journal of American Folklore* 21:40.
 1908c Ethnography of the Cahuilla Indians. University of California Publications in American Archaeology and Ethnology 8(2).
 1925 Handbook of the Indians of California. Bureau of American Ethnology Bulletin 78.
- Lee, Georgia
 1981 The Portable Cosmos: Effigies, Ornaments, and Incised Stone from the Chumash Area. Socorro, NM: Ballena Press Anthropological Papers No. 21.
- Luomala, Katherine
 1978 Tipai-Ipai. In: Handbook of North American Indians, Vol. 8, California, R. F. Heizer, ed., pp. 592-609. Washington: Smithsonian Institution.
- Meighan, Clement W., and V. L. Pontoni, eds.
 1978 Seven Rock Art Sites in Baja California. Socorro, NM: Ballena Press.
- Meigs, Peveril
 1939 The Kiliwa Indians of Lower California. *Ibero-Americana* 15.
- Murdock, George P., and Timothy O'Leary
 1975 Ethnographic Bibliography of North America, Vol. 5: Plains and Southwest. New Haven: Human Relations Area Files Press.
- Oxendine, Joan
 1980 The Luiseño Girls' Ceremony. *Journal of California and Great Basin Anthropology* 2(1):37-50.
- Perez de Ribas, Andres
 1968 My Life Among the Savage Nations of New Spain, by Andres Perez de Ribas, Padre Provincial of the Company of Jesus of New Spain (Mexico). Written in the Year A.D. 1644 and Entitled "Triumphs of Our Sainly Faith Among Peoples the Most Barbarous and Savage of the New Orb," transl. by Tomas Antonio Robertson. Los Angeles: Ward Ritchie Press.
- Reichel-Dolmatoff, Gerardo
 1975 The Shaman and the Jaguar: A Study of Narcotic Drugs Among the Indians of Colombia. Philadelphia: Temple University Press.
- Roberts, Helen H.
 1933 Form in Primitive Music: An Analytical and Comparative Study of the Melodic Form of Some Ancient Southern California Indian Songs. New York: American Library of Musicology, W. W. Norton.
- Rogers, David B.
 1929 Prehistoric Man of the Santa Barbara Coast. Santa Barbara: Santa Barbara Museum of Natural History.
- Roheim, Geza
 1945 The Eternal Ones of the Dream. Ann Arbor: University Microfilms.
- Russell, Frank
 1908 The Pima Indians. Bureau of American Ethnology 26th Annual Report, pp. 3-391. Washington, D.C.: Smithsonian Institution.
- Rust, Horatio N.
 1906 A Puberty Ceremony of the Mission Indians. *American Anthropologist* 8(1): 28-32.
- Sample, L. L.
 1950 Trade and Trails in Aboriginal Califor-

- nia. Berkeley: University of California Archaeological Survey Reports No. 8.
- Schleiffer, Hedwig
1973 Sacred Narcotic Plants of the New World: An Anthology of Texts from the Sixteenth Century to Date. New York: Hafner Press.
- Setzler, Frank M.
1952 Seeking the Secrets of the Giants. National Geographic Magazine 102(3): 390-404.
- Smith, Gerald A., and Wilson G. Turner
1975 Indian Rock Art of Southern California. Redlands: San Bernardino County Museum Association.
- Sparkman, Philip S.
1908 The Culture of the Luiseño Indians. University of California Publications in American Archaeology and Ethnology 8(4).
- Spier, Leslie
1923 Southern Diegueño Customs. University of California Publications in American Archaeology and Ethnology 20(16).
1955 Mohave Culture Items. Flagstaff: Northern Arizona Society of Science and Art.
- Stevenson, Matilda C.
1915 Ethnobotany of the Zuni Indians. Bureau of American Ethnology 30th Annual Report, pp. 31-102. Washington, D.C: Smithsonian Institution.
- Strong, William D.
1929 Aboriginal Society in Southern California. University of California Publications in American Archaeology and Ethnology 26.
- Tanner, Clara L.
1973 Southwest Indian Painting. Tucson: University of Arizona Press.
- Toffelmeier, Gertrude, and Katherine Luomala
1936 Dreams and Dream Interpretation of the Diegueño Indians of Southern California. Psychoanalytic Quarterly 5:195-225.
- Underhill, Ruth M.
1941 Indians of Southern California. Washington, D.C: Bureau of Indian Affairs.
1948 Ceremonial Patterns of the Greater Southwest. Monographs of the American Ethnological Society 13:1-62.
1956 The Navahos. Norman: University of Oklahoma Press.
- Venegas, Miguel
1966 A Natural and Civil History of California, Vol. 1. New York: Readex Microprint.
- Villasenor, David V.
1963 Indian Sandpaintings of the Greater Southwest. Healdsburg, CA: Naturegraph Co.
- Voth, H. R.
1901 The Oraibi Powamu Ceremony. Fieldiana: Anthropology 3(2).
- Wallace, William J.
1978 Music and Musical Instruments. In: Handbook of North American Indians, Vol. 8, California, R. F. Heizer, ed., pp. 642-648. Washington: Smithsonian Institution.
- Waterman, Thomas T.
1908 Diegueño Identification of Color with the Cardinal Points. Journal of American Folklore 21:40-42.
1910 The Religious Practices of the Diegueño Indians. University of California Publications in American Archaeology and Ethnology 8(6).
1971 Yurok Geographical Concepts. In: The California Indians: A Sourcebook, R. F. Heizer and M. A. Whipple, eds., pp 472-479. Berkeley: University of California Press.
- Weitlaner, Roberto J.
1969 The Cuicatec. In: Handbook of Middle American Indians, Vol. 7, R. Wauchope, ed., pp. 434-447. Austin: University of Texas Press.

Wellmann, Klaus F.

- 1979 A Survey of North American Indian Rock Art. Graz, Austria: Akademische Druck-u.

White, Raymond C.

- 1963 Luiseño Social Organization. University of California Publications in American Archaeology and Ethnology 48(2).

Zigmond, Maurice

- 1977 The Supernatural World of the Kawaiisu. In: Flowers of the Wind: Papers on Ritual, Myth, and Symbolism in California and the Southwest, T. C. Blackburn, ed., pp. 59-96. Socorro, NM: Ballena Press Anthropological Papers No. 8.

