Journal of California and Great Basin Anthropology
Vol. 3, No. 2, pp. 257-268 (1981).

Pitted Rock Petroglyphs in Southern California

D. L. TRUE
M. A. BAUMHOFF

BECAUSE of a long-term research interest in pitted rock petroglyphs, we were interested and somewhat concerned several years ago when Minor (1975) published his paper "The Pit and Groove Petroglyph Style in Southern California". Our *interest* was in the description of the southern California examples, the distribution data, and the fact that someone was working with this material in a systematic way. Our *concern* was focused primarily on the proposal that a meaningful interpretation for the pitted rock features could be found in the extant Luiseño ethnographic literature.

Although at the time we considered certain parts of Minor's interpretation to be questionable, we did not feel that a response or reaction to his proposal was necessary. In the interim, however, several writers have cited the Minor paper, and although these authors are often careful not to endorse Minor's interpretation directly, the citations tend to legitimize what would seem to be an incautious reading of the literature.

DISCUSSION

In essence, Minor (1975:15) proposed that in addition to the previously suggested ethnographically based interpretations for pitted rocks in northern California (baby rocks and rain rocks), similar features in southern California could be associated with Luiseño migration legends and puberty ceremonies. This conclusion is based on a reading of the ethnographic literature, on certain archaeological data, and on a single reference by a local historian. In spite of this limited documentation, the idea has been picked up by writers interested in rock art and southern California ritual activities, and consequently is in the process of becoming embedded in the literature. For example, a reference to Minor's paper is included in a discussion of the Orange County Maze and Bell Rock (Knight 1979; McKinney and Knight 1979) and is cited by Fink (1979:61). Oxendine (1980:47) includes a mention of the Orange County Bell Rock in an end note and associates the concepts of "ringing stones" and "pitted rocks" in a direct reference to Minor.

Each of these citations, while properly cautious in its own right, tends to reinforce the interpretation proposed by Minor, an interpretation that appears to be gaining an unwarranted credibility. With this prospect in mind, we here address several of Minor's basic data sources.

An important part of his proposal is that pitted rock features in the Luiseño territory

D. L. True and M. A. Baumhoff, Dept. of Anthropology, Univ. of California, Davis, CA 95616.

were related to landmarks and territorial markers, and DuBois (1908*a*:158) is cited in support of this contention:

> When the people scattered from Ekvo Temeko, Temecula, they were very powerful. When they got to a place they would sing a song to make water come there, and would call that place theirs; or they would scoop out a hollow in a rock with their hands to have that for their mark as a claim upon the land. The different parties of people had their own marks. For instance, Albañas' ancestors had theirs, and Lucarios' people had theirs, and their own songs of munival to tell how they had traveled from Temecula, of the spots where they stopped and about the different places they claimed.

To reinforce the idea that rocks were used to claim or mark territory, Minor again cites DuBois:

> The song means that he is singing to his ancestors. He is singing about the rock. It is his. They left it here to claim the land which was theirs [DuBois 1908*a*:115].

The specific reference in the above is the Turtle Rock described by Albañas.

A similar idea is stated by Strong (1929:285) who is cited by Minor as follows: "In the old days each family (clan) had a territory marked by rocks and they killed all trespassers."

There seems little doubt that rocks of various kinds were used as boundary markers. Strong (1929:285), for example, presents a statement attributed to Francisco Ardea, a Luiseño living in Pala, that mentions territories marked by rock*s*. The plural here is significant. First, it is likely that any territory would require more than one rock to define its boundaries, even if the markers consisted of single elements, and secondly the idea of the use of stones in marking territories agrees with data collected by one of us (DLT) from Luiseño consultants in the mid-1950's. In this later instance, the data indicate that marker stones were placed on top of larger rocks or outcroppings somewhat like simple cairns. While it is impossible to say that a pitted rock has never functioned as a location marker, there are reasons why Minor's proposal should be treated with caution. It is clear from DuBois, for example, that each group had their own *unique* or distinctive marker rocks, and from the literature in general, that boundary rocks are not necessarily the same as ancestor rocks or other important sacred markers. DuBois (1908*a*:153) stated, for example: "The different parties of people had different marks." This idea is reinforced by the example of the turtle rock on Albañas' property. The turtle rock was left there by Lucario's (Cuevish) ancestors as a "track of possession. . . It was left there to claim the land" (DuBois 1908*a*:115). This is a special rock form and DuBois goes to some length describing the appearance (cracks, etc.).

A second important point relates to the concept of a scooped-out rock. The rock as described or mentioned by DuBois does not easily conjure up an image of a boulder marked by a number of small pecked depressions. In fact, it is unlikely, in our opinion, that DuBois' consultant (Albañas), who lived very near to the scooped-out rock feature, would not have been able to differentiate between the two rather different concepts (multiple pecked depressions versus a scooped-out spot in a rock). To carry this idea one step further, it seems logical that once a rock had been "scooped" to form a marker, there would be little point in repeatedly "scooping" in the same location, such as would be required to make a typical pitted boulder feature. Initially, it seemed clear enough to DuBois that the rocks were "scooped" by the ancestors when they moved into the area for the first time. In fact, the passage as stated by DuBois seems to suggest that it was *usual* for the ancestors to "sing a song to make water there . . . or they would

scoop out a hollow in a rock with their hands. . ." with the implication in general that this happened more than once (i.e., at more than one place). However, a careful reading of the entire passage suggests that the actual *scooping* may have happened only one time, and that it is the named ancestor rocks in general that are found in more than one location. With respect to the specific "scooped" rock, for example, DuBois states in a following paragraph, "Piyevla the man who scooped a rock on the hill near Albañas house at La Jolla was one of Lucario's ancestors. . ." (1908*a*:158). This places a second rock at La Jolla, but in the next sentence DuBois tells us that the aforementioned scooped-out rock is *in the same locality as the turtle rock.* This actually places *the* scooped-out rock at Potrero (Cuca) not at La Jolla. A footnote to this passage, in fact, verifies this location and gives the name Peyevla (sic) to a hollow rock *near Potrero.* The location in general is known as *Popikvo* and the "sliding place on the large rock in Trujillos' field *adjoining* popikvo was made by Lucario's ancestors sliding on it" (emphasis added). This clearly places Popikvo at Cuca and as near as we can tell, the reference is to *one* scooped-out rock. No other mention of a similar feature has so far been discovered in the standard Luiseño ethnographies.

Minor then proposed that the process of making a hollow in a rock (scooping) can be tied to the girls' puberty ceremony. This connection is made via the ringing stones described by DuBois (1908*a*:95), and presumably the sound is a byproduct of the scooping process, i.e., "scooping a hollow with their hands" (1908*a*:158). Actually it seems that Minor is proposing that the ringing sound is (was) produced by pounding on the rocks to make hollows. This in our opinion is inconsistent with the data as presented.

Because of the importance of this idea, however, it is probably worth examining the ringing stones concept in greater detail. There are several mentions of the ringing stones in the standard literature, and some reason to believe that they can all be traced back to DuBois. Also, it is probably significant that all references to this phenomenon are plural: DuBois (1908*a*:107): "Kaslapish, the ringing stones used in the girls ceremony"; DuBois (1908*a*:115): "song sung by one man to accompaniment of ringing stones"; Strong (1929:317): describes Ant Ordeal for boys: ". . . after this the anut songs were sung to the accompaniment of ringing stones"; Strong (1929:321): refers to the girls ceremony and to "a song sung to accompaniment of ringing stones"; Strong (1929:321): refers again to the Ant Ordeal and mentions the songs of *Anut*: ". . . four or five of which are remembered, sung to accompaniment of ringing stones".

The pattern is consistent, and the reference in every case is to stone*s*. Our reading of these descriptions suggests a situation where more than one stone is subjected to some treatment for the purpose of making a ringing sound. Nowhere, however, is it suggested that the sounds were created by pounding, and to be consistent with the picture proposed by Minor (and Oxendine), we would have to visualize a situation where persons were pounding on boulders (more than one?), and to believe that such a pounding or pecking process would make a ringing sound. It is correct of course, to state that "ringing stones" were used in some Luiseño puberty ceremonies. It is the *association* of the concept of ringing stones (as part of puberty ceremonies) with the marker or boundary rocks, that concerns us here. If we are reading Minor correctly, the logical sequence or set of relationships as he sees it would go something like this:

(1) Special rocks exist, at least one of which was scooped out. These are

described by Luiseño consultants.

(2) These rocks were used to mark locations and to claim territories.

(3) Such special rocks often were seen as ancestors and were sung to under certain circumstances.

(4) The singing with respect to these special ancestor rocks was done as part of ritual activities.

(5) As part of *other* rituals, singing was done to the accompaniment of ringing rocks.

(6) Such ringing rock sounds were produced by pounding on the marker or ancestor rocks to make pits (scooping?).

In our opinion, a move from the idea of a scooped-out rock with very special connotations, to the use of such a rock as accompaniment for songs sung as part of the girls' puberty ceremony, is logically deficient and lacking in empirical support. The only obvious common denominators appear to be the concept *rocks* and the process of *singing*.

In sum, we find no fault with the basic ethnographic statements. That is to say, we agree that the Luiseño used rocks as boundary markers, and we agree that rocks have been identified as important sacred ancestral relics. We accept the fact that certain of the puberty ceremonies included songs sung to the accompaniment of "ringing stones," but suggest there is nothing in our reading of the literature that in any remote way supports the proposed relationship between the ancestral rocks, territorial markers, "ringing rocks," and pitted rock petroglyphs.

We are not suggesting that in some particular instance a boundary or ancestor rock might not also be a pitted rock, nor that a particular pitted rock might not make a ringing sound when struck. It is the case, for example, that the Bell Rock in Orange County is also a pitted rock feature. The majority of the pitted rock features examined by us in San Diego County, however, are made on rocks that do not ring. In fact, most of them are made on soft, almost decomposing, rock that makes a very dull thud when struck.

To support his ethnographically based argument (or vice-versa), Minor presented certain archaeological data that he believes document the use of pitted rock features in Luiseño puberty ceremonies. He proposed, for example, that there is a strong correlation between habitation sites, pictographs, and cupule rock features (1975:17). Because a number of pitted rock features have been reported from sites that have pottery and pictographs, he concluded that the cupules are late in time (1975:11). Because these features are known to occur at sites where pictographs are sometimes present, and because pictographs are often associated with Luiseño puberty ceremonies, he proposed a direct correlation between pitted rocks and Luiseño puberty ceremonies. Furthermore, Minor proposed as part of the same argument that since a number of ceremonials were shared by the Luiseño and Diegueño (in late prehistoric or historic times), whatever inferences can be made for the Luiseño can be applied equally well to the Diegueño.

There seems no doubt that pottery, pictographs, and pitted boulders are often found on the same sites (or close-by). It may well be the case, in fact, that this association is meaningful in terms of the proposed late dating. In the absence of *meaningful* ethnographic support, however, there is no basis at all for *assuming* a correlation between the pitted boulders *and any specific ceremony*! Just because pictographs are found on a site does not mean that a pitted rock feature on the same site has to have been used in conjunction with puberty ceremonies. We recognize that such a correlation or association is *possible*, but propose that it has not

been demonstrated however remotely in any of the data so far presented.

The strongest and most uncomplicated evidence for a connection between the pitted rock features and puberty ceremonies presented by Minor is unrelated to the ringing stones, to the aforementioned marker rocks, or to the archaeology as described. This evidence consists of a report attributed to Horace Parker via Paul Chace wherein an unnamed consultant identified a pitted rock feature in the Aguanga area as a kind of "scorecard" used in conjunction with puberty ceremonies (Paul Chace cited in Minor 1975). A slightly different version of this same story is presented by Parker himself as part of his discussion of the girls' puberty ceremony:

> In a nearby wash on the underside of a boulder was a cluster of round peckings in the boulder about the size of a silver dollar. *I was told by the Indians* who lived here that these were a kind of score card with each peck representing an initiate of the ceremony. *They* neglected to state whether the round marks were for the boys or the girls" [Parker 1965:32, emphasis added].

While it seems clear enough that the rock described by Parker was a pitted boulder petroglyph, and his proposed explanation is potentially very significant, in our opinion this explanation should be considered in the light of several other important circumstances.

For one thing, we are puzzled by the differences in the published account and the information given to Chace more or less at the same time. According to Minor, Chace talked to Parker in 1965 and was told that the function of the pitted rock (pit and groove style petroglyph) had been told to him (Parker) in or about 1953 by *an Indian* from Aguanga. The consultant was said to have been a man in his 60's, who had passed away "in the mid 1950s." Parkers' published account, however, has the same information coming from *the Indians*: "They neglected to state. . ." etc. (Parker 1965:32). There may be no real significance in this difference other than editorial license, but it could be important to know when editorial license has been used and when we are being presented straight information. However competent Parker may have been as an historian, it is clear from his published work that he is not likely to be a useful source of reliable ethnographic information. In fact, if the level of accuracy presented in his little book *The Early Indians of Temecula* is any measure, there is minimal basis for serious consideration of any of his data, unless confirmation could be obtained from other sources. For example, in the discussion of the puberty ceremonies and pictographs mentioned above, Parker (1965:31) proposed that the several small mortars in the granite boulders around the ceremonial site were apparently "used for the preparation of Mani." Even a casual reading of the Luiseño literature would suggest that the crushed Datura root concoction to which he refers, was prepared in a small portable and quite sacred mortar (*Tam Yush*). A mortar, in fact, born of the "earth mother" as one of the original beings (DuBois 1908*a*: 130, 78, 79, 92, 114, 115, 157, 161, 172; Sparkman 1908:207). Given the very clearly stated circumstances surrounding this part of the ritual, it is unlikely that bedrock features whatever their size would have been used as part of the indicated ceremony.

As part of the same discussion, Parker (1965:31) stated:

> It is now pretty well established that after the girls' sand roasting ceremony, and *while they were still groggy* [emphasis added] they were given paint made from tree pitch and mineral pigments and told to draw on the rocks.

This statement is seemingly inaccurate in several instances, and it seems clear that Parker has confused aspects of the boys'

toloache ceremony (which includes the use of the narcotic Datura), and the girls' ritual, which did not.

None of these points of course actually negates Parker's proposed explanation for the pitted boulder, but it can hardly be argued that ethnographic accuracy is one of his strong points. To reinforce our concern with this particular data source, we suggest that the explanation proposed is even more difficult to accept seriously when considered in light of the previous ethnographies available for the Luiseño. For example, for the fifty-odd years prior to the publishing of Parker's little tome, there is not one recognizable mention of pitted rock petroglyphs in any of the literature we have been able to examine to date.

It is hardly reasonable to believe, for example, that DuBois, who was working at a time when the Luiseño were much closer to a traditional lifeway than they are at the present, and who focused her efforts and interests on the ritual and ceremonial aspects of that lifeway, would have failed to pick up even a hint relating to the role of pitted rock features in any of those ceremonies. Her consultants were excellent, and given the detail she was able to collect in many areas of Luiseño religious life, it can hardly be argued that the pitted rock information was specially withheld for some reason.

If the arguments presented by Minor relative to a connection between "marker stones" and other rocks with ceremonial significance were valid, one wonders why José Albañas and/or Lucario Cuevas did not make that point for DuBois. If these two venerable consultants were willing to describe the tales of *munival*, point out the location of the marker rocks and describe the specifics of the scooped-out rock, going out of their way to emphasize the *ceremonial importance of both the features*, and the concepts they represented, why would they not have gone one additional step and explained how such rocks were used in conjunction with puberty or other rites had this been the case?

Sparkman (1908), who lived in the area for many years and who had an abiding interest in the language and lifeways of the Luiseño, does not mention the pitted rock features.

Gifford (1918) and Strong (1929) were both interested in the lifeways and social organization of the Luiseño and had an interest in clan (lineage) locations and affiliations. They do not mention the pitted rock features, nor do they suggest possible connections between the initiation rites and any such "special rocks."

Kroeber (1925) seemingly does not mention either the rock features or a special relationship with any rock feature other than those used in the pictograph paintings. Harrington (1933, 1934) likewise does not mention pitted rock features or any association between similar features and initiation rites, nor does Curtis (1926).

In the 1950's, when Raymond White was collecting data for his dissertation, he had access to several critical Luiseño consultants, not the least of whom was Reginaldo Pachito, a Not^{h} of some considerable knowledge and importance. Pachito, in fact, was probably the most knowledgeable of the surviving Luiseño at that time, and he had agreed to talk with White in a very special capacity. He would talk not only as a consultant in the traditional anthropological sense, but as part of a special mission *conceived by Pachito*, to pass on as much of the surviving Luiseño tradition as possible for posterity (White 1963:IV). White worked with Not^{h} Pachito for many, many months, and during this time had access not only to knowledge held by Pachito, but information collected *by* Pachito from other elders in response to White's questions. It is hardly feasible, given the circumstances, that some mention of pitted rock features (as part of any one of a dozen rituals or circumstances

discussed) would not have been made if these features were a viable part of the surviving traditional knowledge. This notion takes on special importance when it is considered in connection with other research activities in process in the same area at the same general time.

During the period from 1945 through 1960, one of us (DLT) spent considerable time researching several aspects of the Luiseño lifeway, including a concern with Luiseño pictographs. This research included, in addition to field surveys, repeated discussions with several knowledgeable Luiseño. The focus at the time was on ethnogeography (territorial features, markers, mythical beings or persons marked by stones), and on the ritual aspects of the puberty ceremonies connected with the rock paintings.

These investigations were conducted under near ideal conditions with respect to consultants, and it is difficult to believe that knowledge of pitted rock features as elements in the puberty ceremonies was being withheld. During the same general period of time, this interest in the initiation ceremonies included participation in a reenactment of a girls' puberty ceremony for a documentary film (never published), made under the *direct supervision* of a Luiseño *paha*. No mention was made at the time of pitted rocks. Furthermore, shortly before the filming of the aforementioned reenactment, Luiseño consultants were taken to the prehistoric site at Molpa for the specific purpose of identifying and naming artifacts and features present on that site. These consultants included several knowledgeable Luiseño elders and Chief Pachito. Bedrock mortars, bedrock metates, and other features or elements were identified and named (including the associated painted rock). Two pitted rock features were present on the site. One was not identified at all by the consultants and the other was described as a possible arrow-sharpening rock.

Eleanor Beemer, who has lived in the Pauma Valley area adjacent to the Pauma Village for many decades and who has collected data on the Luiseño for over 40 years, reports many interesting and important details relating both to secular and religious aspects of Luiseño life, but does not mention either pitted rock petroglyphs or any association of similar rock features with initiation or other ritual (Beemer 1980).

When these general circumstances are considered in the aggregate, and in conjunction with the fact that pitted rock elements are seemingly not mentioned as part of the Luiseño creation myth, it is difficult to argue for significant use of pitted rock features by the Luiseño, at least in very recent times. Our point here is not that the pitted rock features are absent from sites in the San Luis Rey or Luiseño territory, but rather to suggest that if such features were used by the ancestors of the Luiseño, such use might have been at a relatively remote period of time, and with ceremonials other than the initiation rites as proposed by Minor. There are many rituals, of course, for which no detail is remembered.

Although we know far too little at the present time to speculate meaningfully on the function, origins, or even distributions of pitted rock features, there are some useful points that can be made in conjunction with the present discussion. It is important to recognize, for example, that there is more than one *kind* of pictograph (i.e., not all pictographs in the Luiseño territory were painted in conjunction with initiation ceremonies). Just as importantly, it is the case that there may be more than one kind of pitted rock feature to be considered.

At the present time, in fact, we can identify what appear to be two rather different kinds of pitted rock elements:

(1) Those with small diameter holes similar to the specimens reported at Molpa (True, Meighan, and Crew 1974:Plate

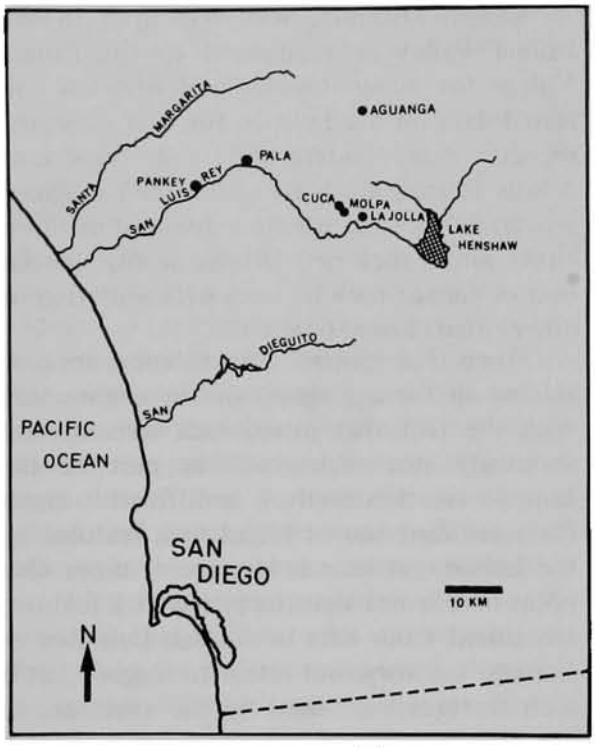

Fig. 1. Map showing location of sites discussed in the text.

5) and at the Pankey site (CA-SDi-682) (see Fig. 1).

(2) Those with small saucer-shaped depressions that look like incipient bedrock mortars. These are typically one and one-half or two inches in diameter and one-half inch deep and may be pecked into either vertical or horizontal surfaces. (This particular form *may* under some circumstances represent elements other than petroglyphs, and possible use as paint mortars and acorn anvils should be considered in some contexts.)

At this writing, we know of only two examples of the small-diameter hole features in San Diego County (Molpa and Pankey). The feature at Molpa was tentatively identified as a *possible* arrow-sharpening rock and given the name *lawalawax* (White 1963:125). This explanation is believed to be very tentative, however, and should be considered in conjunction with other data available relative to arrow making.

Examples of the second kind of pitted rock are relatively common in Luiseño territory, although minimal time has been devoted so far to distribution studies, and we are as yet uncertain as to their exact patterning and associations. Work is in progress relative to these kinds of data for southern California and will be presented in another paper in the future.

In the way of a summary, we suggest the following:

(1) There is no meaningful ethnographic evidence connecting the pitted rock features and girls' initiation or any other specific ceremony in the Luiseño territory.

(2) The proposed archaeological associations between some pitted rock features and painted pictographs in Luiseño territory should be carefully and cautiously considered since the *apparent association* may be of minimal significance.

(3) The proposed recent age for all pitted rock features in Luiseño/Diegueño territory may or may not be correct in all cases and in lieu of substantive evidence, should be treated with considerable caution.

(4) Although no systematic effort has been made so far to look for such information, and it is unlikely that meaningful data will be turned up, we suggest that evidence for the use of pitted rock features would more likely be found in ethnographies of Yuman-speaking (Hokan) peoples than in the Luiseño. In point of fact, the only references noted so far that have even a remote potential in this direction are from the Yuman area. We recognize

that these are not definitive statements relating directly to pitted rock features as these are known archaeologically, but they represent the only statements we have encountered so far that use words and concepts that *might* be interpreted as possible references to pitted rocks or processes that might result in pitted rocks.

The first of these turns up in DuBois "Ceremonies and Traditions of the Diegueño Indians" (1908*b*:321-32). Here DuBois describes a Fair Weather Making Ceremony (*Awikunchi*) which alludes to making holes in a rock in conjunction with weather management. The *Awikunchi* ceremony is no longer remembered, and DuBois was able to get only a few bits and pieces of information as of 1908. She stated for example:

> Awikunchi is the name of a certain rock in the middle of which there has been carved the figure of a tiny coiled snake. When a man makes a hole in this rock it will grow together again. . ." [DuBois 1908*b*:231].

The rock itself had been defaced so that DuBois was unable to provide a more detailed description of its surface other than that it was of soft granite. The actual relationship between the rock and the song series which bears its name could not be discovered, but she was told (DuBois 1908*b*:231-232) that the series was sung for fair weather: "If it rains for some time, they may say 'let us sing Awikunchi to end the rain.' " Although this is the only statement we have encountered so far that relates weather-control measures with a rock or the process of altering the surface of a rock, there are several mentions of weather control in the general ethnographic literature for the Yuman area.

A second reference that may be relevant (or of interest) is found in Kelly's *Cocopa Ethnography* (1977). In this instance, the reference is to a pitted (?) rock related to the mythical *Keruk hap* (land of the dead). The tale relates the travels of two people over vast portions of the Cocopa and Kamia territory, and their arrival (finally) at the land of the dead.

> When the travelers reached *Kerup Hap* they stood in front of the door. They saw only the rock with some marks pecked on it. Nothing else was on the outside because everything was inside the rock. . . [Kelly 1977:127].

While we are fully cognizant of the feeble relationships represented by these two situations, they are actually the only references we have been able to find in southern California so far that even remotely refer to features that might be interpreted as pitted rock petroglyphs. In our opinion, in fact, the lack of specific mention of these features in the Luiseño/Diegueño ethnographic literature is of considerable significance. If these elements were related to any of the more recently practiced ceremonies, there is little question but that they would have been mentioned. It is amply clear that Sparkman, DuBois, Davis (1919, 1921), Waterman (1910), and others had access to consultants who were not only knowledgeable but who were willing to go beyond the normal constraints with regard to the divulgence of typically secret and sacred information. It is difficult to believe that if the pitted rock features had been part of any of the remembered ceremonies, they would not have been mentioned or described. With this in mind we suggest:

(1) The pitted rock features in question were used in ceremonies no longer remembered and are probably generally unrelated to initiation rites;

(2) Such features were probably used in more than one ceremony and for more than one purpose;

(3) These ceremonies, whatever their function, are part of a widespread cultural pattern in California and the Great Basin;

(4) There is a significant possibility that this distribution can in some way be associated with an early distribution of Hokan-speaking peoples.

CONCLUSIONS

As we stated at the beginning of this paper, we were interested in Minor's paper originally because of our longtime interest in pitted rock petroglyphs. Minor's compilation is a very useful one and together with Fleshman (1975) is one of the few distribution studies of these items to have been published in recent years. The only other such studies we know of are by Payen (1966) and Heizer and Baumhoff (1962:209, 234-238). The study by Heizer and Clewlow (1973) interestingly enough does not distinguish this sort of petroglyph as a separate type or style. They present a North Coast style which largely consists of pitted or cupule rocks, but they see these as local and late.

Our collection of data on these petroglyphs so far has yielded a rough distribution in California and the Great Basin. They occur in the Coast Range from Humboldt Bay to San Francisco Bay. To the south they are known from San Luis Obispo County south to the Mexican border. The hiatus between San Francisco and San Luis Obispo is likely to be more apparent than real. In the Sacramento-San Joaquin Valley, they occur very spottily, but rocks themselves occur very spottily in that region. In the Sierra Nevada, they occur in the north and central parts; we think no one has looked for them in the southern Sierra. There may be a few in the Mojave Desert, but they certainly have not been widely reported. In the Great Basin, they seem to be present in most areas (Heizer and Baumhoff 1962; Von Werlhof 1965). It is here that the evidence of antiquity is clearest (Bard, Asaro, and Heizer 1975).

Elsewhere, one of us has mentioned the underlying scheme that we are considering with respect to this kind of rock art (Baumhoff 1981:181). The idea briefly was that the Hokan languages represent remnant populations of what was once a basal layer or cultural substrate in a large area of the southwestern United States. This is not basal in the sense of earliest (the various Clovis-like finds are doubtless earlier), but in the sense of fundamental adaptation from which all the later (non-agricultural) cultures derive. It was further proposed that the cupules or pitted petroglyphs form an element of the cultural substrate. In order to demonstrate this, it would be desirable to show that where Hokan peoples survived ethnographically the pitted petroglyphs should exist both early and late while in areas occupied ethnographically by non-Hokan peoples they should be early but not late. Even in a perfect world we would not expect a one-to-one correspondence in this respect. Given that the basic notion is correct, it might be that, for example, an immigrant group picked up the pitted petroglyph habit from their predecessors.

It will be seen from this perspective that the present paper can be categorized as a case of special pleading, and so it is with some apology that we present what may be regarded as a case of overkill. We think, however, that each case or proposed case for the ethnographic use of these petroglyphs must be examined as carefully as possible; otherwise, it will not be possible to make the case plausible at all.

REFERENCES

Bard, James C., Frank Asaro, and Robert F. Heizer
1975 Perspectives of Dating of Great Basin Petroglyphs by Neutron Activation Analysis of the Patinated Surfaces. Report prepared for the U. S. Energy Research and Development Administration.

Baumhoff, M. A.
1981 The Evolution of Pomo Society. Journal of

California and Great Basin Anthropology 2(2):175-185.

Beemer, Eleanor
1980 My Luiseño Neighbors. Ramona, California: Acoma Books.

Curtis, Edward S.
1926 The North American Indian, Vol. 15. Cambridge: The University Press.

Davis, Edward H.
1919 The Diegueño Ceremony of the Death Images. Museum of the American Indian, Heye Foundation, Indian Notes and Monographs 5(2).

1921 Early Cremation Ceremonies of the Luiseño and Diegueño Indians of Southern California. Museum of the American Indian, Heye Foundation, Indian Notes and Monographs 7(3).

DuBois, Constance Goddard
1908*a* The Religion of the Luiseño and Diegueño Indians of Southern California. University of California Publications in American Archaeology and Ethnology 8(3).

1908*b* Ceremonies and Traditions of the Diegueño Indians. Journal of American Folk-lore 21(81-82).

Fink, Gary
1979 Some Rock Art Sites in San Diego County. Pacific Coast Archaeological Society Quarterly 15(2).

Fleshman, Georgia Lee
1975 Pit and Groove Rocks and Cupules in San Luis Obispo County. San Luis Obispo County Archaeological Society Occasional Papers No. 9.

Gifford, Edward W.
1918 Clans and Moieties in Southern California. University of California Publications in American Archaeology and Ethnology 14(2).

Harrington, John P.
1933 Annotations of Alfred Robinson's Chinigchinich. In: Chinigchinich: A Revised and Annotated Version of Alfred Robinson's Translation of Father Gerónimo Boscana's Historical Account of the Belief, Usages, Customs and Extravagencies of the Indians of this Mission of San Juan Capistrano. Santa Ana: P. T. Hanna Fine Arts Press.

1934 A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southwest California. Smithsonian Miscellaneous Collections 92(4).

Heizer, Robert F., and Martin A. Baumhoff
1962 Prehistoric Rock Art of Nevada and Eastern California. Berkeley: University of California Press.

Heizer, Robert F., and C. William Clewlow
1973 Prehistoric Rock Art of California (2 vols.). Ramona California: Ballena Press.

Kelly, William H.
1977 Cocopa Ethnography. University of Arizona Anthropological Papers No. 29.

Knight, Lavinia
1979 Bellrock and Indian Maze Rock of Orange County. Pacific Coast Archaeological Society Quarterly 15(2).

Kroeber, A. L.
1925 Handbook of the Indians of California. Bureau of American Ethnology Bulletin No. 78.

McKinny, Aileen, and Lavinia Knight
1979 Orange County Rock Art at ORA-13 and ORA-177. Pacific Coast Archaeological Society Quarterly 15(2).

Minor, Rick
1975 The Pit-and-Groove Petroglyph Style in Southern California. San Diego Museum of Man Ethnic Technology Notes No. 15.

Oxendine, Joan
1980 The Luiseño Girls Ceremony. Journal of California and Great Basin Anthropology 2(1):37-50.

Parker, Horace
1965 The Historic Valley of Temecula: The Early Indians of Temecula. Balboa Island, California: Paisano Press Librito No. 1.

Payen, Louis A.
1966 Prehistoric Rock Art in the Northern Sierra Nevada, California. Unpublished M.A. thesis, Dept. of Anthropology, Sacramento State College, Sacramento, California.

Sparkman, Philip S.
1908 The Culture of the Luiseño Indians. University of California Publications in American

Archaeology and Ethnology 3(4).

Strong, William D.
1929 Aboriginal Society in Southern California. University of California Publications in American Archaeology and Ethnology 26(1).

True, D. L., C. W. Meighan, and Harvey Crew
1974 Archaeological Investigations at Molpa, San Diego County, California. University of California Publications in Anthropology 11.

Von Werlhof, Jay
1965 Rock Art of Owens Valley, California. Berkeley: University of California Archaeological Survey Reports No. 65.

Waterman, Thomas J.
1910 The Religious Practices of the Diegueño Indians. University of California Publications in American Archaeology and Ethnology 8(6).

White, Raymond C.
1963 Luiseño Social Organization. University of California Publications in American American Archaeology and Ethnology 48(2).