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#### **Author**

Baumhoff, M. A

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# The Evolution of Pomo Society

M. A. BAUMHOFF

**T**HIS paper summarizes some ideas that have occurred to me about North Coast Range archaeology while thinking about data derived from excavations on Dry Creek, Sonoma County, California. The excavations there were performed at the request of the U.S. Army Corps of Engineers as a part of an archaeological evaluation of the Warm Springs Dam Project. This being so, the ideas generated are immediately applicable only to 60 or so archaeological sites along a short stretch of Dry Creek and its tributaries. Some of my conclusions, however, have inherently greater generality and all of them have some relevance to Pomo archaeology as a whole. That is not to say the conclusions are correct; archaeological conclusions are almost never correct in the long run, at least not as they are specifically formulated, but insofar as they are concretely stated they can always be used as hypotheses leading to further development. The details of site description and specimen provenience are contained in the report of Baumhoff and Orlins (1979).

The area we are concerned with is a small valley in the North Coast Range about 25 miles southwest of Clear Lake (Fig. 1). It constitutes only a third of the area covered by the Warm Springs Dam Project, although it contains more than half the sites (37 out of 63); I believe it to be the core of a tribelet territory. This tribelet is given the name Shakowe by Merriam

(Heizer 1966) but is not recognized by any other ethnographer, these lands having been included by both Barrett and Stewart in the territory of the Mahakamotcemei or Cloverdale Pomo, although they did not, so far as I can tell, discuss this question with anyone who had lived in the relevant territory. It seemed apparent on archaeological grounds to those of us working at Warm Springs that this land must have been that of an autonomous tribelet; otherwise we were at a loss to account for the complex of sites centering around what were evidently large winter villages at CA-Son-593 and 582 (Fig. 1). We were gratified therefore to note that Merriam, at least, had recorded it as a separate tribelet (Heizer 1966).

The archaeological sequence for the Warm Springs area as I see it is shown in Fig. 2. The basic chronological scheme is that of Fredrickson (1974:fig. 2) modified in the following ways: Fredrickson's Borax Lake Aspect and Houx Aspect have each been subdivided into early and late periods; the mortar and pestle replace the mano-metate complex a thousand or so years later than he would see it; typological relationships are somewhat modified and are more detailed. The specific typological relationships shown are partly Fredrickson's but are modified by consideration of Meighan's (1955) data from Willits and especially by stratigraphic relationships at Warm Springs.<sup>1</sup>

The Post Pattern, shown as the earliest phase on Fig. 2, may or may not be represented in the material excavated at Warm Springs.

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M. A. Baumhoff, Dept. of Anthropology, Univ. of California, Davis, CA 95616.

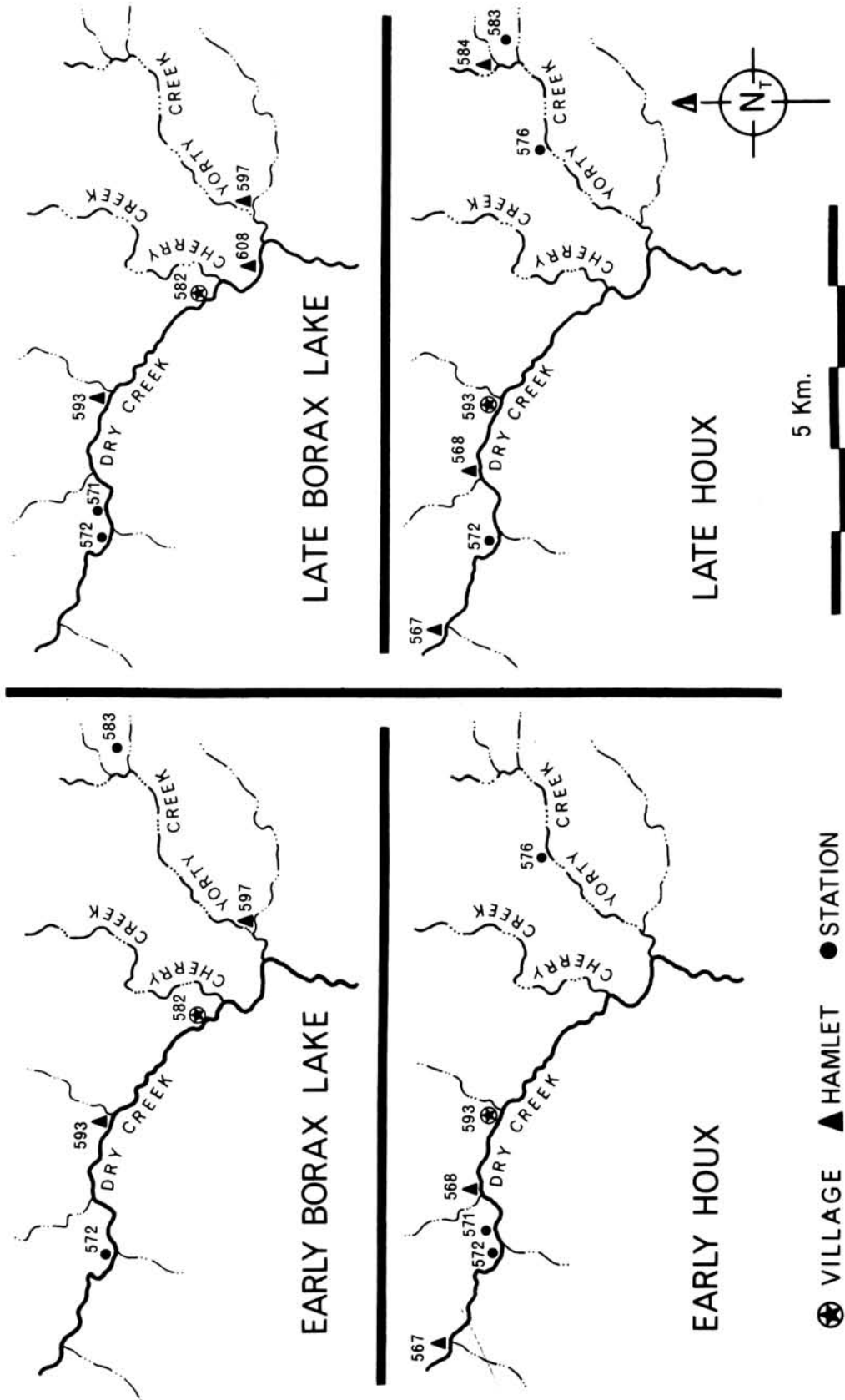


Fig. 1. Settlement sequence at Warm Springs.



None of the characteristic artifact types (fluted points or crescents) were recovered but there is some possibility it was manifested. This possibility is discussed in more detail elsewhere (Baumhoff and Orlins 1979). The remainder of

this paper discusses the Borax Lake and Houx Aspects.

Tables 1 and 2 summarize some of the salient characteristics of particular sites, phases, and site types of the Shakowe tribelet.

**Table 1**  
**SITE CHARACTERISTICS BY TYPE AND PHASE**

	Site	Depth (cm.)	Chert/Obsidian Ratio	No. Flakes	Reworked Biface	Projectile Points
<b>Late Houx</b>						
Village	593	70	0.14	1043	3	6
Hamlet	567	20	4.42	65	—	1
	568	80	4.28	586	2	9
	584	40	3.35	287	—	2
Station	572	20	0.48	151	3	4
	576	50	4.09	280	—	1
	583	30	9.79	329	—	2
<b>Early Houx</b>						
Village	593	40	0.49	257	—	—
Hamlet	567	80	2.64	315	2	5
	568	50	12.27	146	—	1
Station	571	80	0.06	4454	23	19
	572	50	0.40	485	2	2
	576	140	1.03	542	2	3
<b>Late Borax Lake</b>						
Village	582	80	1.40	867	2	6
Hamlet	593	70	7.50	51	—	—
	608	80	1.40	1122	2	2
	597	50	4.47	711	—	3
Station	571	50	0.21	791	3	2
	572	30	3.06	418	—	2
<b>Early Borax Lake</b>						
Village	582	50	4.00	60	—	—
Hamlet	593	30	7.00	24	—	—
	597	110	19.02	301	—	2
Station	583	60	3.81	289	—	—
	572	40	61.71	439	—	2

There is reason to believe at least some tribelet boundaries are very ancient and I will here treat the sites listed in Table 1 as if they represented the same tribelet for more than 5000 years. The site types of village, hamlet, and station are basically size categories.<sup>2</sup> Stations were sites suitable for one or at most two houses, hamlets for five to 10 houses, and villages about 50 houses, these figures being derived from the broader study done by Cook and Heizer (1965). The quantitative characteristics shown are chosen to illustrate some of the processes which took place during the several millenia represented: the chert-obsidian ratio is a measure of trade, the chert being all local while obsidian was obtained from extra-territorial sources; debitage frequency is a rough measure of stone-working

activity; reworked bifaces, a specialized industry of the North Coast Range, are included to show the growth of a local activity; and projectile point frequencies may be compared to similar statistics from other areas.

Before attempting a summary of the material shown in Tables 1 and 2, I should first say a word about petroglyphs. Typical petroglyphs of the North Coast Range are of the sort that Heizer and I some years ago called pit-and-groove (Heizer and Baumhoff 1962:234-238). We felt then that the style dated from 5000 to 3000 B.C. Although it is (and was) clear that our grounds for such specific dating were flimsy at best, a beginning date in that time range still seems reasonable to me. It is also true that this style of petroglyph continued (in the North Coast Range but not elsewhere) to

Table 2  
SITE CHARACTERISTIC SUMMARIES

		Chert/Obsidian Ratio	per m <sup>3</sup>		
			Debitage	Reworked Bifaces	Projectile Points
Villages	Hb	0.14	1490	4.3	8.6
	Ha	0.49	643	—	—
	BLb	1.40	1083	2.9	7.9
	BLa	4.00	120	—	—
Hamlets	Hb	3.96	655	1.4	8.6
	Ha	3.75	359	1.5	4.6
	BLb	2.12	942	1.0	2.3
	BLa	17.06	232	—	1.4
Stations	Hb	3.06	760	3.0	7.0
	Ha	0.12	2030	10.0	8.9
	BLb	0.62	1511	3.8	5.0
	BLa	9.86	728	—	2.0
Totals by Phase	Hb	1.11	878	2.6	8.1
	Ha	0.20	1402	6.6	6.8
	BLb	1.30	1100	1.9	4.2
	BLa	10.47	384	—	1.4
Totals by Site Type	Village	0.52	927	2.1	5.0
	Hamlet	2.97	588	1.0	4.1
	Station	0.35	1487	6.0	6.7
Grand Totals		0.70	992	3.7	5.8

be made up into the ethnographic period when they were known as baby rocks (Pomo) and rain rocks (Karak and others). In the area shown in Fig. 1, nine petroglyph sites have been identified, nearly all of them of the pitted or cupule variety with only one or two grooves recorded. The occurrences vary from three or four pits on a small (less than one m.) boulder to three instances in which hundreds or thousands of pits are found on rocks several meters in diameter. The latter situation is found in the upper part of the area in and around sites Son-568, 571, and 572.

For my purpose it is necessary to attempt dating of the petroglyphs. The cultural deposit at the three sites listed occurs mainly in the two middle phases (late Borax Lake and early Houx) with very little before or after. My view is that the really large petroglyphs were made mostly during the two middle phases and that the smaller ones, mostly downstream around Son-593, are late and represent ethnographic "baby rocks."<sup>3</sup>

Referring now to Fig. 1 and Table 2, a summary of some activities in this territory can be presented. In Early Borax Lake times the principal village was at the mouth of Cherry Creek with outlying hamlets above and below and tiny stations beyond these. The very high chert-obsidian ratio indicates only a minor amount of imported material. In fact, given the vagaries of excavation and chronology, I believe there was no obsidian used at this time. The small (total) amounts of debitage and other remains may be accounted for by the fact that these four components are all at the bottom of sites so that the deposit is a mixture of sterile submidden and cultural deposit.

In Late Borax Lake Times the principal village is still at the mouth of Cherry Creek, a new and important hamlet is begun just downstream, and a second station (Son-571) is added upstream near Son-572, which had already been occupied. These two tiny stations now form the nucleus of what will become a

notable center in the next period. It will be recalled that the largest petroglyphs are located near these sites at a time conjectured to begin in Late Borax Lake Time. The chert-obsidian ratio decreases markedly here, indicating much increased trade, the figure being primarily due to material from site Son-571. It is also at this time that we find the beginning of the reworked biface industry.<sup>4</sup>

In the early Houx period we see a general shift upstream: the major village shifts about a mile up to Son-593, all the sites around Cherry Creek and Yorty Creek are abandoned (except the station at Son-576), and the population around the 571-572 nucleus explodes with the establishment of hamlets above and below. The obsidian industry flowers at this time, especially at Son-571 where we have tremendous amounts of debitage, reworked bifaces, and projectile points. Again it will be recalled that I believe the petroglyphs were manufactured during this period.

During the Late Houx period Yorty Creek is reoccupied, Son-571 is abandoned (and 572 nearly so) and the obsidian industry, which has now declined, has moved downstream to the principal village site of Son-593. The petroglyphs on small boulders, evidently the ethnographic "baby rocks," are also around this large village.

My interpretation of this sequence is as follows: sometime in the Early Borax Lake period the progenitors of the Pomo moved into the area. Previously there may have been Post Pattern or other very early people of unknown affiliation (Yukian?) in the general area but they had no center here and were not restricted to a narrowly circumscribed area but were wide-ranging. Beginning in Early Borax Lake times we see people who were strictly local and used only local materials. They may also have already been making pitted petroglyphs as a part of their religion. They had a large winter village and several smaller auxiliary places of occupation: they were already a tribelet as

defined by Kroeber.

In Late Borax Lake times the tribelet organization continues but now they begin to trade with their neighbors and their chipped stone industry expands and diversifies as does their religious activity as symbolized by the large petroglyphs. In Early Houx the same processes of expansion of trade, obsidian manufacture, and religion continues and carries these activities to a very notable florescence. But now the focus of these activities was centered around sites 571 and 572, each of which probably only held one family, rather than at the major village, which has now moved to site 593. The remains of these activities, in fact, suggest that we have traders, priests, and artisans all localized around the 571-572 complex. This means we have specialists segregated from the bulk of the people. One can argue from this that there is a sort of class differentiation at this time.

This situation ends abruptly in Late Houx times when sites 571 and 572 are all but abandoned, while trade (obsidian), chipped stone manufacture, and petroglyph making all move to the large site at 593 and are much reduced in importance. I suggest that what happened at this time was the introduction of the Kuksu cult. The Kuksu cult involved dances and other ceremonies which served as initiation rites and to impersonate spirits; they were performed in a large earth covered lodge. Kroeber maintained that it was of Patwin origin and spread from there to neighboring groups.<sup>5</sup> I suggest that it did so at this time and in so doing subverted the native Pomo religion and realigned Pomo society into the historic pattern in which the large winter village was the tribelet center. The previous segregation and differentiation has disappeared.

If this scheme seems reasonable it can be viewed in two distinct ways. In the first place it can be seen as a Toynbee-esque kind of organic growth. In that case we can call the four phases incipient, formative, classic, and post classic in

which the last can be regarded as the beginning of a new growth which was truncated by the European invasion.

Another way to look at it is in terms of Penutianization of native Hokan culture. People have been talking for many years about underlying Hokan elements in California, some of which were changed by invading Penutians. Two of these Hokan elements are commonly thought to be twined basketry and a handstone-milling stone food grinding technique. We see that the mortar and pestle replace the *mano-metate* complex here sometime before the time of Christ. I cannot deal with the twined basketry-coiled basketry situation—bone does not preserve here so there is no information on awls.<sup>6</sup> I have thought for many years that another Hokan element is pit-and-groove petroglyphs, replaced in some parts of California with other type petroglyphs, but retained in some Hokan areas into the historic period. I would like here to propose formally this style of petroglyph as an ancient Hokan element.<sup>7</sup>

I also believe that pit-and-groove petroglyphs were an important part of ancient Hokan religion and that when that religion was replaced by the Kuksu cult among the Pomo, the petroglyphs were retained only as a minor element, a survival; they still existed but with much reduced importance. What then may have been the nature of this religion? A clue comes from the ethnographic sources. We know that the Pomo used the petroglyphs to help promote human fertility. The Karok and some of their neighbors use them as rain rocks, to cause it to rain or stop raining. I suggest an important reason to cause rain among the Karok is connected with salmon. In the fall the salmon run cannot begin until the first major rains occur, breaking through the sandbar which blocks the mouth of the Klamath. Thus it would be a matter of vital importance. It seems clear that both these practices are for the purposes of fertility or world renewal and that



we must look in this direction if we are further to identify ancient Hokan religious practices. I think this is going to require additional analyses of California Indian texts, and also linguistic reconstruction of religious lexical items of the various California Indian linguistic groups.

Recapitulating in terms of Pomo society, we have in Early Borax Lake an incipient period in which Hokan (Proto-Pomo?) people move into this little valley west of the Russian River using handstone and milling stone to grind food, making twined basketry, practicing an early Hokan religion which has to do with world renewal and involved the manufacture of pitted petroglyphs. They have a tribelet organization with a principal village and several subsidiary but undifferentiated hamlets. In Late Borax Lake times, they begin a process of differentiation of villages and commence trade relations with their neighbors but maintain their tribelet organization. This process continues in the Early Houx period to a point of extreme differentiation which is the florescence of Pomo culture, or, in Kroeber's terms, the Pomo climax. In the Late Houx period Penutian religion, in the form of the Kuku cult, converts these people from their former religion and at the same time society is reorganized so that specialists, both religious and secular, are at the principal village. Archaeologically this last period is poorer than the penultimate one. Incidentally, the last period indicates a reduction of class differentiation rather than the reverse, in spite of the contentions of some students of the subject.

### NOTES

1. The phase names shown in Fig. 2 are used as mere devices, heuristic and mnemonic, and are not meant to be a commentary on Fredrickson's scheme. My view at present is that Fredrickson's is the only scheme available for the North Coast Range that organizes the data in a meaningful way.

It will no doubt be modified, perhaps drastically, as more evidence becomes available. The absolute dates given are of course only crude approximations. A series of four radiocarbon determinations have been made on charcoal samples from sites Son-593 and Son-576. They support or at any rate do not contradict the dating given here.

Both Fredrickson and J. A. Bennyhoff object to calling the last phase Late Houx. I have spoken to Bennyhoff most particularly about this and his view is, I believe, that if the changes in religion and society are as substantial as I suggest then they are substantial enough to merit a separate name. This view has great weight and I reluctantly reject it for two reasons. One is that since I am adopting the terms merely as labels, then the fact that the last two phases are called Houx does not imply more continuity than if they were called, for example, Smith and Brown.

The other reason is, I believe, a more substantial one. It is true that if my present conclusions are correct then the Pomo underwent very considerable transformation at the beginning of Late Houx. In fact, I have stated herein that this can be seen as the last or latest development of the process of Penutianization. But even if this is true the Pomo were still Pomo in ethnographic times and for me to adopt terminology which explicitly acknowledges Penutianization would be to deny Pomo continuity, which is not my intention. The present terms are, for my purposes, quite neutral. When these sites are excavated more thoroughly before Warm Springs Dam is built, strictly local phase designations will have to be adopted.

2. The sites dealt with include only those with considerable midden and constitute only 11 of the 37 sites known from the area shown on Fig. 1. The remainder are hunting blinds, petroglyph sites, and surface scatters which, except for petroglyphs, are not considered here. The terms village, hamlet, and station are not particularly satisfactory as names for the categories dealt with here. The term station especially troubles me because it implies a place devoted to very specialized activity and that activity alone. The "stations" on Dry Creek reveal very specialized activity of several kinds but they are living sites as well.

As usual, terminological difficulties reveal

inadequacies of a more fundamental kind, in this case the nature of the tribelet. Kroeber's (1932:258) definition of the tribelet speaks of "a principal town," which is my village, and "minor settlements." Minor settlements must include both hamlets and stations as I define them but my reading of the ethnography does not enlighten me on further distinctions. It is clear that such distinctions are of great importance in the Warm Springs sample and therefore they are probably important in at least some other areas of California. Our typology of sites can use quite a lot of refinement.

3. The argument put baldly in depths of deposit is not convincing. It can be argued that the stations Son-571 and 572 are the important sites here and in that case comparable figures for depth of deposit are Early Borax Lake, 0.4; Late Borax, 0.8; Early Houx, 1.3; Late Houx, 0.2. The figures for debitage are even more striking: 439, 1209, 4939, and 151.

The situation of these two tiny sites is even more remarkable than the figures indicate. They are in the most idyllic locations of any sites in the area, next to beautiful deep pools in Dry Creek (a very uncommon feature), one of them across from a sheer-walled rock rising 50 feet above the pool. Furthermore each of these tiny middens is on a second terrace about 25 feet above the creek and below, on the first terrace just next to the creek, is an area with several mortars, pestles, manos, and metates, presumably a separate but associated food processing area. This is the only instance of such intra-site complexity noted in the area.

Altogether the unusual aspects of these two sites seem to me such that it is reasonable to associate them with the huge petroglyphs nearby. Thus the above figures for the Late Borax Lake and Early Houx components strengthen the case for dating the petroglyphs in the same periods.

4. The reworked biface industry is defined technologically by Nancy Whitney (Baumhoff and Orlins 1979:Appendix). It consists of biface pieces (very likely the ones shown on the left in Fig. 2), almost always of obsidian, which have been snapped off and further modified for some as yet undetermined purpose. These were first noted in print by Fredrickson (1974:44), who refers to them as burins because the usual additional modification

is by means of a burin blow. So far as I know, this industry was first identified by Robert Orlins in his work at Indian Valley (cf. Orlins 1971). There is no doubt that the industry forms a very important part of the archaeological inventory of parts of the North Coast Range during Late Borax Lake and Early Houx times. A very important task for archaeologists of the region is determination of the function of these mutilated pieces. We also need further stratigraphic information because their abundance makes them very important as time markers.

5. Kroeber (1932:254) actually says the Kuksu cult had its greatest elaboration among the Patwin and credits Dixon (1905) for having first suggested it. He says further on (p. 315) that "The Patwin, who participate in most features, may have been the chief originators of most; or they may, on account of their central situation [in Kuksu cult distribution], have been the most favored recipients and readiest acceptors." Thus Kroeber does not categorically maintain Patwin priority with regard to this religion. Nevertheless, I think he and most other students of the situation would regard this as extremely likely.

6. My guess is that coiled basketry came in at the same time as the mortar and pestle. This would be especially likely if it was the hopper mortar. Coiled basketry is especially well adapted to be a hopper since it is a simple matter to enlarge the bottom coils of the hopper to better resist pulverization by the pestle. The comparable process is very difficult with twined basketry since warps are inherently more difficult to strengthen than coils. The Yana, who made hoppers of twined basketry, resorted to rather ludicrous stratagems, such as leather attachments, pseudo-coils, and the like, to overcome this structural flaw. Thus the functional connection between coiled basketry and hopper mortars makes likely their simultaneous introduction.

7. That the Hokan language group once occupied most of present-day California has been a standard, though speculative, notion for many years (cf. Baumhoff and Olmsted 1963). The pitted petroglyphs have a similarly wide distribution. Heizer and I showed a wide but spotty distribution

(Heizer and Baumhoff 1962). More recently Minor (1975) has shown the distribution of 53 sites known from the southern tier of counties, Fleshman (1975) indicates 13 from San Luis Obispo County, and Payen (1966) 48 from the west slope of the Northern Sierra Nevada. Heizer and Clewlow (1973) do not show them *in toto* but their North Coast Range style is evidently part of the same thing.

Thus there are plenty of occurrences of pit-and-groove petroglyphs everywhere that one can hypothesize a once present Hokan speaking group. When we add to this the fact that this kind of petroglyph is very unspectacular and thus easily overlooked, then the conclusion that they are abundant and ubiquitous is unmistakable.

If the case is easy to argue geographically the same cannot be said for its chronological aspects. Some hints are beginning to emerge regarding linguistic spreads (thus the Patwin may have moved into their ethnographic position around A.D. 1400 or 1500), but this does not tell us anything about predecessors. In any case, dating petroglyphs (the other horn of the dilemma) seems as chancy as ever. The most hopeful recent prospect I have seen is that of Bard, Osaro, and Heizer (1976) in which neutron activation analysis of patina is confronted. We still seem to be some years from firm results though.

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Mojave warriors (*Kwanami*) were considered ideal scouts and soldiers by the U.S. Army. This photo, taken sometime in the early 1890's by Andrew Forbes, shows a group of Mojave warriors and an Anglo who may have been a government agent.