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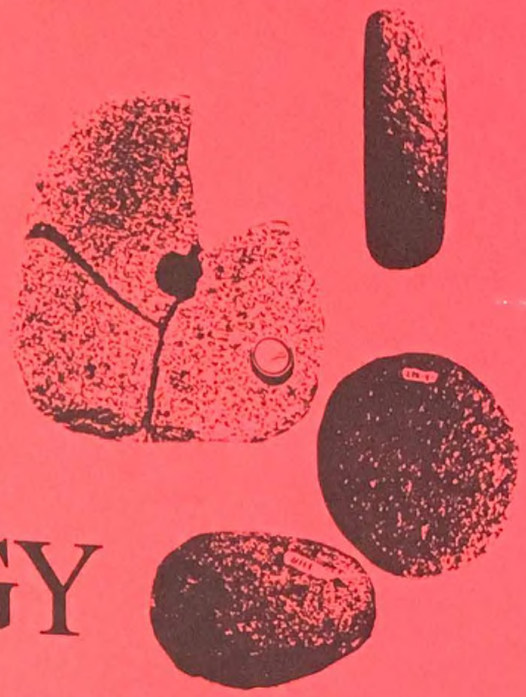

Volume III Number 4

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The Pauma Complex in Northern San Diego County: 1978

D. L. True

Institute of Archaeology

University of California, Los Angeles

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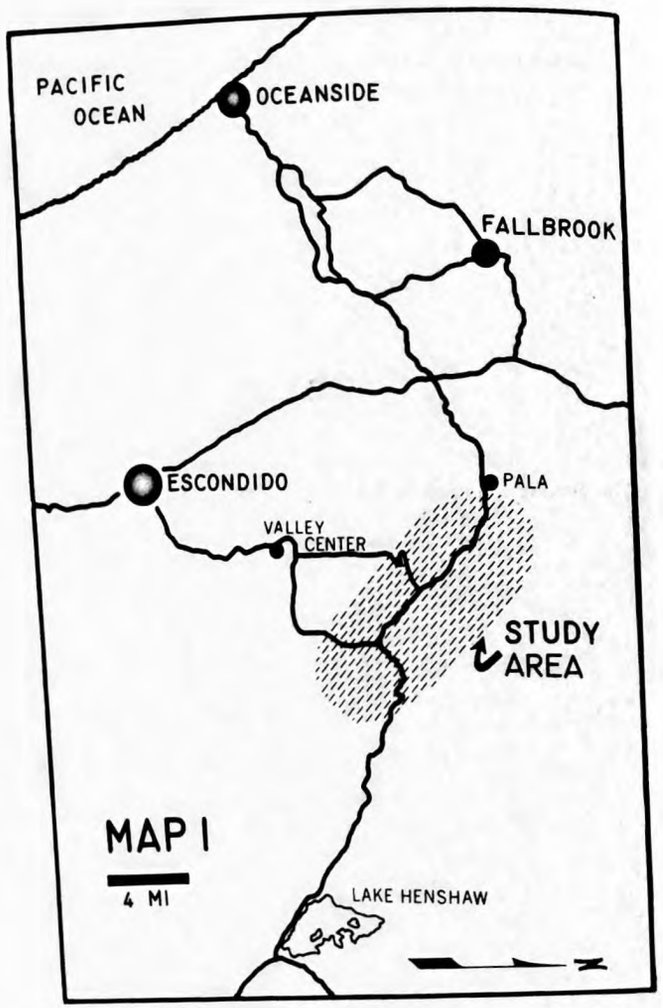


Location Map for Pauma Complex Study Area

The Pauma Complex in Northern San Diego County: 1978

D. L. True

INTRODUCTION

In 1958 a report entitled "An Early Complex in San Diego County California" was published (True 1958), describing a reasonably old Millingstone based complex centered in the Pauma Valley region of the San Luis Rey River drainage, northern San Diego County, California. The 1958 paper was based on surveys and observations made over a period of several years, and it seemed at the time to be a fair assessment of both the sites and the artifacts. Research relative to these sites and others in the area was ongoing, however, and almost before the ink was dry, data were available which made a partial reassessment of the paper necessary.

Unfortunately, for various reasons which need not be discussed here, the Pauma Complex paper was never rewritten and for many years this dereliction was of minimal consequence. However, during the past two or three years, increased archaeological activity in the area, and a number of references to the Pauma Complex material in contexts suggesting misinterpretation traceable to the original description, make it imperative that the Pauma Complex be re-examined at once.

The discussion that follows is not an attempt to bring together all of the data in northern San Diego County that are relevant to the Pauma Complex (or to Pauma-like Millingstone subsistence patterns). It is an attempt to update and make available data relevant to the original definition not now part of the public record. The discussion is based almost entirely on data collected or examined by the writer or his close associates over the past 30 years or so, and refers primarily to the geographic space presently known as the Pauma Valley (Map 1 shows the location of the principal study area). A wider ranging discussion of Pauma and Pauma-like elements is in preparation and will be presented in another context, hopefully in the not too distant future.

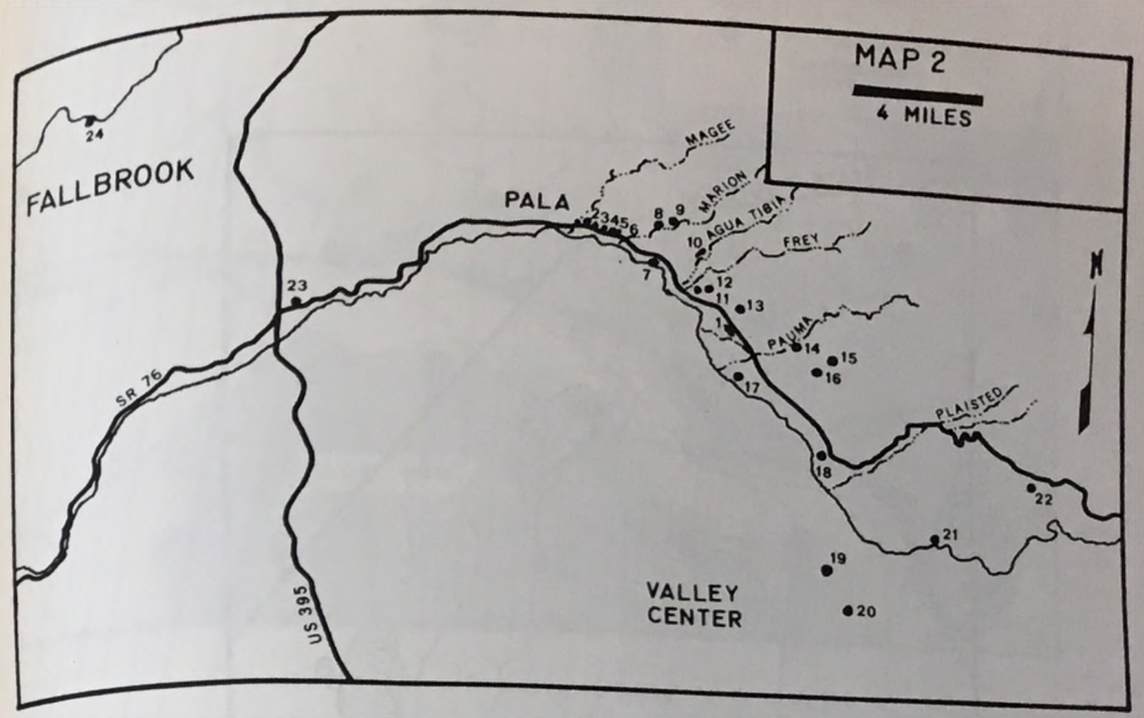
THE SITES

The original definition of the Pauma Complex was based on a sample of 25 sites. Thirteen of these were located in the Pauma Valley proper and 12 were situated on the Valley Center plateau south and west of the San Luis Rey river valley. For the present paper, the focus of attention will be on the sites located in the general Pauma Valley area where a total of 21 sites appear to fit the Pauma Complex pattern. This includes 11 sites from the original list (True 1958:259), and 10 sites not included in the 1958 discussion. In addition, data are presented from three sites located outside of the Pauma Valley area (also not included in the 1958 discussion). Map 2 shows the location of sites included in this discussion, and Table 1 provides some additional locational information.

For the 21 sites in the general Pauma valley area it is of interest that all are located on relatively high ground with respect to the more recent San Luis Rey sites. These locations include knolls, saddles, and old terrace-like alluvial formations often associated with mudflow deposits. In almost every case, the sites are located quite near potential water supplies (drainages, etc.) but are usually some distance from presently viable water sources. None of the sites examined as part of this study had any obvious evidence of soil alteration or midden. Casual examination of the sites suggests that they consist of sparsely scattered surface artifacts. It is proposed, however, that this is not really the case and that most, if not all, of the included sites actually represent shallow buried components with varying degrees of internal complexity. The artifacts recovered from these sites so far are those which have been exposed by erosion or other ground disturbance activities such as farming.

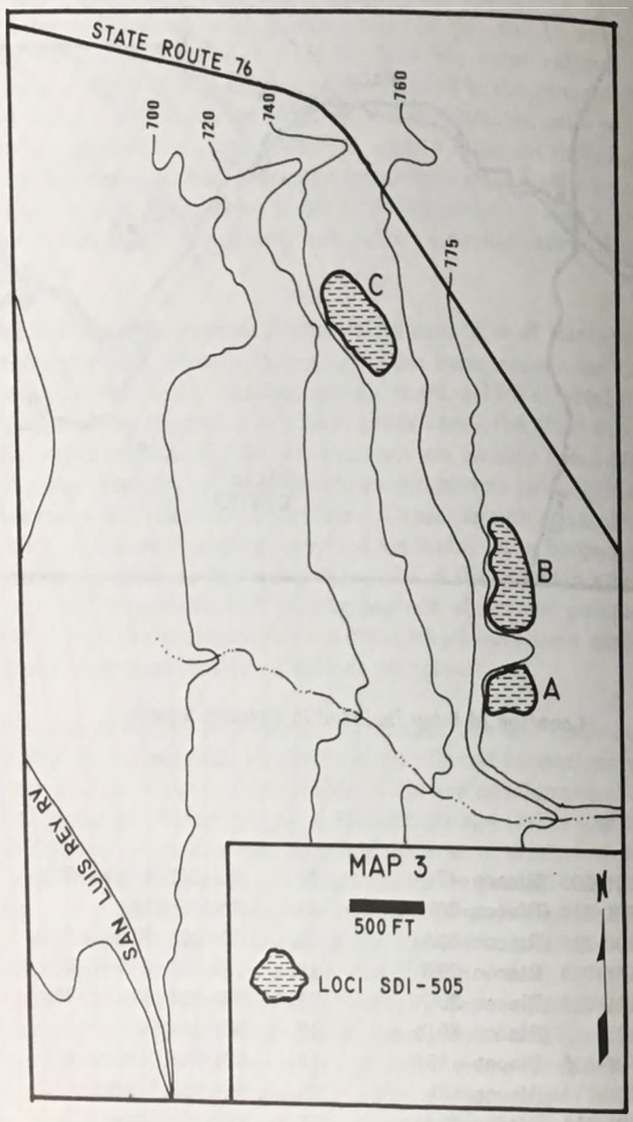
Examination of the site locations in conjunction with soil maps suggests that the sites in question are consistently located on older alluvial formations rather than on the more recent soils. Most of these "older" soils are developments on mudflow and fanglomerate formations believed to be of Pleistocene age (Jahns and Wright 1951:13). Many of the mudflow formations (and landslide features of similar composition) are directly related to the Elsinore fault. Map 5 shows the general distribution of these fault related formations and indicates the location of Pauma Complex sites associated with them. In some locales the older soils are exposed. In other contexts they are masked by a veneer of more recently deposited alluvial soils. In the case of SDi-505 (Map 2, Number 1), for example, (Map 3, Locus A) the surface appears to be a sandy loam soil of recent derivation (Hanford Sandy loam, Holes and Pendleton 1918:55-61). [The Hanford series designation has been replaced in more recent literature by the Visalia series of sandy loam (Bowman, United States Department of Agriculture, Soil Conservation Service, 1973: Map 13)]. An examination of the exposed bluff adjacent to site SDi-505, however, reveals that the Visalia (Hanford) sandy loam is actually a thin layer overlying an older and somewhat different soil formation.

It is proposed that for Locus A the artifacts were associated with the uppermost portions of the older formation rather than with the surface deposition of sandy loam.

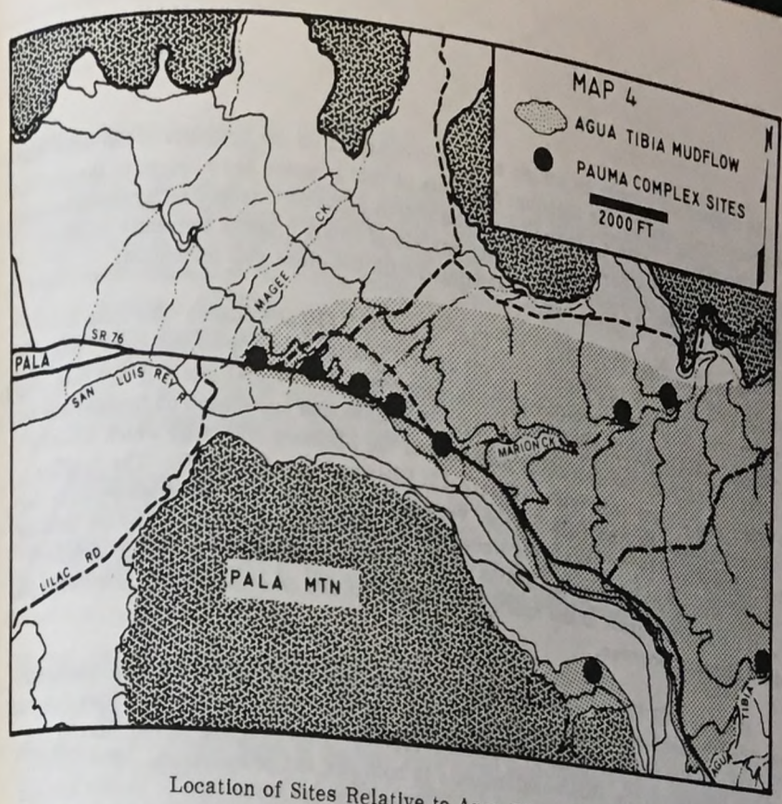


Location of Sites Included in Present Report

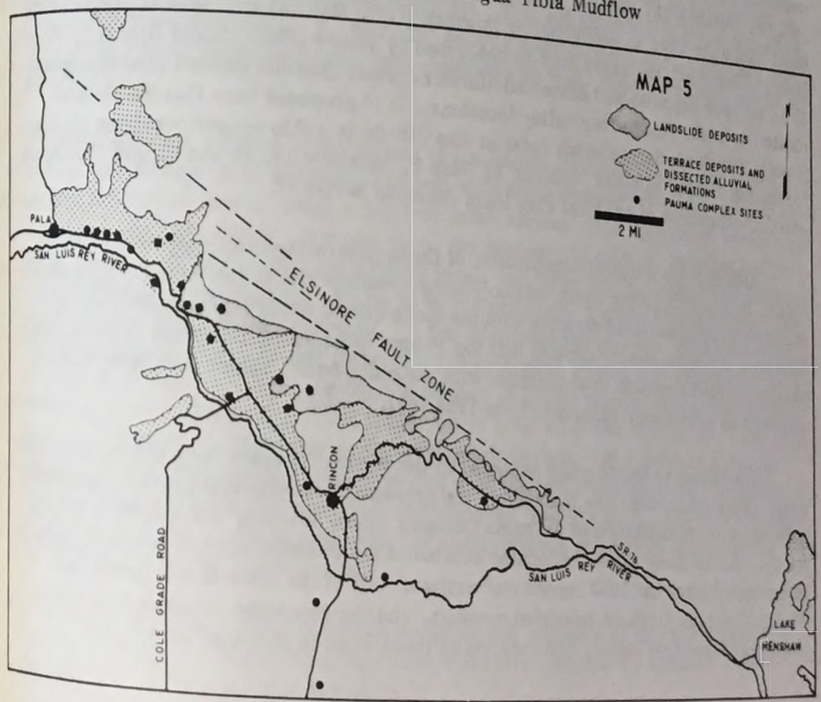
1. SDi-505 (Rincon-47)
2. SDi-716 (Rincon-20)
3. SDi-717 (Rincon-20A)
4. SDi-718 (Rincon-20B)
5. SDi-719 (Rincon-20C)
6. SDi- (Rincon-20D)
7. SDi-513 (Rincon-130)
8. SDi-774 (Rincon-43)
9. SDi-511 (Rincon-43A)
10. SDi-510 (Rincon-41A)
11. Rincon-300
12. Rincon-301
13. SDi-267 (Rincon-71)
14. Rincon-100
15. SDi-303 (Rincon-133)
16. SDi-512 (Rincon-93)
17. SDi-733 (Rincon-80)
18. SDi-26 (Rincon-129)
19. SDi-346 (Rincon-137)
20. SDi-665 (Rincon-135)
21. SDi-16 (Rincon-30)
22. SDi-308 (Rincon-77; Molpa)
23. SDi-682 (Pala-8; Pankey site)
24. Santa Margarita-1



Location of three loci for SDI-505



Location of Sites Relative to Agua Tibia Mudflow



Location of Pauma Sites in Pauma Valley Area in Relation to Elsinore Fault Zone and Older Related Soil Formations

This is supported in part by stains and discolorations on the artifacts at the time they are uncovered, and by the fact that artifacts at this location are brought to the surface as a byproduct of farming activities. The notion is further supported by the situation at Locus B (Map 3) where the overlying mantle of sandy loam is presently missing. Artifacts at Locus B are directly associated with the older soil formation.

Sites SDI-716, 717, 718, 719, 514, 774, 511, 510 and Rincon-20D (Map 2, Numbers 2, 3, 4, 5, 6, 7, 8, 9 and 10) are all located directly on the Agua Tibia Mudflow with soils very similar to those exposed at Locus B at site SDi-505 (see Map 4). The Agua Tibia Mudflow is believed to be of Pleistocene age (based on fossils) and is at least in part attributable to the presence of the Elsinore fault zone which crosses its upper end (Jahns and Wright 1951:12-13; Ellis and Lee 1919:257). The mudflow soils are classed as Anderson Series, very gravelly (Bowman, Soil Conservation Service, 1973: Map 13). These soils were previously categorized as part of the Ramona Series (Holmes and Pendleton 1918:53). Sites Rincon-300 and 301 (Map 2, Numbers 11 and 12) are marginal to the mudflow proper, but are on similar soils derived from nearly identical sources.

Site SDi-267 (Map 2, Number 13) is located on fault derived landslide material with thin localized soil mantles similar to the old Ramona Series soils. Sites SDi-303, 512, 733 and Rincon-100 (Map 2, Numbers 15, 16, 17 and 14) are on old alluvial fan deposits similar to the Pala conglomerate in both age and composition. Site SDi-26 (Map 2, Number 18) appears to be located in an area characterized by recent alluvial soils since the area is described by Bowman (1973: Map 14) as a Visalia Series sandy loam. However, the same area is described by Weber (1963: County Report 3, Plate 1) as terrace deposits and dissected alluvium rather than the general alluvium designation for some other river valley locations. It is proposed here that the obvious Visalia (Hanford) Series sandy loam at site SDi-26 is a thin veneer overlying an older formation. Sites SDi-346, 665 and 16 (Map 2, Numbers 19, 20 and 21) are located on eroding exposures of residual clay loam (Ramona Series ?).

Although the cultural significance of these generalized soil associations is not clear, it is worth noting again that no Pauma Complex site in the Pauma Valley area appears to be associated directly with the more recent sandy loam, valley fill soils. Further, it seems nearly certain that the Pauma Complex artifacts are derived from shallow buried contexts in association with the older soils, rather than being surface scatters as previously reported (True 1958:262).

In addition to the 20 sites assigned to the Pauma Complex from the Pauma Valley area, three other sites are included in the present discussion that provide meaningful substance to the definition of a Pauma Complex (sites SDi-308, 682 and Santa Margarita-1). All of these sites are located outside of the Pauma Valley area and all were investigated after the 1958 report was written. All of the sites in this group have Pauma Complex artifacts in buried contexts, and the described artifacts were taken from excavated test units. The location of these sites is shown on Map 2.

SDi-308 (Rincon-77) (Map 2, Number 22)

SDi-308 (Molpa) is primarily a protohistoric site with stratified SLR I and II components (True, Meighan and Crew 1974). As part of the investigations at this site during the mid to late 50's, however, a one-foot wide test trench was excavated across a small knoll adjacent to the Molpa midden. Prior to the testing, there was no evidence of occupancy or utilization visible on the surface (in contrast to the primary site area a few meters away, which had a dark friable midden). Excavations at the test trench location uncovered a number of artifacts situated from 20 to 70 cm. below the surface. There was no evidence of visible soil alteration in the trench and artifacts recovered were clearly unlike those from the adjacent primary site location.

Although the artifact sample from this component is quite small, it was a significant contribution to the definition of the Pauma Complex since it represented the first evidence of Pauma Complex artifacts from an undisturbed subsurface context. As can be seen from Table 4, the artifacts recovered are clearly Millingstone oriented.

SDi-682 (Pala 8) (Map 2, Number 23)

SDi-682 is, as was SDi-308, primarily a multiple component San Luis Rey Complex site. Excavations here in the late 1950's and early 1960's were focused on the San Luis Rey component. The Pauma component was discovered as part of a testing project on the margins of the main site deposit. The test excavations were under the direction of the writer and C. N. Warren. Shortly after this activity, additional test units in the Pauma component area were excavated by Mrs. Robert Pankey, owner of the site.

The situation relative to the testing of the Pauma Complex component at SDi-682 by True and Warren is as follows: The test units were standard five-foot squares excavated in six-inch levels, using a 1/4 inch mesh screen. The uppermost levels were essentially San Luis Rey I. For test pit 3, the recovery of cultural remains had reduced to near nothing by about the 30-inch level, and there was no longer any obvious evidence of soil discoloration. In the 30 to 36-inch level, a mano fragment was noted along with two or three felsite flakes. A few additional flakes were recovered from the 36 to 42-inch level. At this point, the 1/4 inch mesh screen was exchanged for a 1/8 inch mesh screen. As a result, the number of flakes recovered increased somewhat, but more importantly, small fragments of bone were now turning up. The bone here was fragmented, and sometimes scorched or burned. At a depth of about 60 inches, a metate was encountered, inverted over the badly disintegrated remains of a burial. The metate was photographed and removed from the unit. The unit was then refilled leaving the burial in situ, with the usual implicit promise to return in the near future to complete the investigation.

A sample of several dozen lithic artifacts and hundreds of tiny bone fragments was removed from a Pauma Complex component stratigraphically situated beneath a San Luis Rey component (see Figure 3).

In spite of the obvious importance of this site, it was impossible to continue the investigations at the time, and the records, artifacts and faunal remains were turned over to a graduate student who planned to continue the testing in the immediate future. For various reasons, this work was delayed, and several years later the student was killed in an accident. Except for the metate, several lithic artifacts and a few notes, held by the writer, none of the test pit data have survived.

Investigations by Mrs. Pankey in an adjacent test pit resulted in the discovery of manos and basined metates along with some chipping waste and several other chipped stone artifacts. The Pankey test pit collections will be described in a forthcoming paper on the investigation of site SDi-682 in general. Map 2 shows the location of SDi-682 and Figure 3 illustrates the relationships between the San Luis Rey and Pauma components. The significance of this stratigraphic relationship to the definition of the Pauma Complex is obvious and need not be discussed in detail in the present paper. Table 5 lists the elements recovered from the Pankey test pit.

Site Santa Margarita 1 (Map 2, Number 24)

Following the test excavations at SDi-682, surveys were extended into portions of the Santa Margarita river drainage, and several Pauma Complex sites were recorded on saddles and ridges along the margins of the canyon. For all practical purposes the artifacts recovered were identical to those found in the San Luis Rey River area. A test excavation at one site (Santa Margarita 1) revealed several artifacts in sub-surface contexts. The test excavation was minimal, and the unit was closed after three levels had been excavated since the purpose at the time was to demonstrate the presence of a diggable deposit. Map 2 shows the general location of this site. The artifacts from this site are listed on Table 6.

ARTIFACTS

Because of the sample size and some circumstances of its collection, no attempt will be made to develop a detailed formal typology for the artifacts recovered from the Pauma Complex sites described above. The artifacts from the Pauma sites are listed by general category in Tables 1 and 2 and are described briefly below. Artifacts from sites SDi-308, SDi-682 and Santa Margarita-1 are listed in Tables 4, 5 and 6. Some of the artifacts recorded from several Pauma sites are no longer available for detailed study and some information is derived from field notes dating back nearly 30 years. In addition, many manos and several metates from SDi-505 were taken away by collectors many years ago, so that exact counts and measurements are not possible. In some other cases, artifacts were reported to the writer and examined in the field, but kept by the farmers who found them. In short, the numbers provided in the tables are quite accurate and the sample is a reasonable one relative to the goals of this paper, but it should not be seen as a basis for meaningful quantitative comparisons.

TABLE 1
LOCATIONAL INFORMATION FOR PAUMA COMPLEX SITES

Site	Elevation	Elevation above River*	Elevation of Nearest Potential Water Source**	Alluvial Surface	Mudflow	Knoll	Saddle	Bench/ Terrace	Soil
SDi-505	760	75	740c					x	clay loam
SDi-716	470	50	460c		x			x	clay loam
SDi-717	500	70	460c		x			x	clay loam
SDi-718	530	90	520c		x			x	clay loam
SDi-719	540	90	520c		x			x	clay loam
RIN-20D	550	90	460c		x			x	clay loam
SDi-513	660	120	540c		x			x	clay loam
SDi-774	800-900	370	800c		x			x	clay loam
SDi-511	930	450	900c		x			x	clay loam
SDi-510	1000-1100	450	900c		x			x	clay loam
RIN-301	780	120	660c			x	x		clay loam
RIN-300	820	160	670c	x					clay loam
SDi-267	1080	400	900s			x			clay loam
RIN-100	1200	480	1160c	x					clay loam
SDi-303	1570	800	1450c	x					clay loam
SDi-512	1350	580	1280c	x					clay loam
SDi-733	760	25	735c	x					clay loam
SDi-26	850	50	810c	x					sandy loam
SDi-346	1150	275	910c	x					clay loam
SDi-665	1000	125	950c			x			clay loam
SDi-16	950	50	950c			x			clay loam
SDi-308	2680	1480	2680s			x			sandy loam
SDi-682	300	260	240c					x	sandy clay loam
Santa Margarita 1	510	150	360c				x		sandy clay loam

*except for site Santa Margarita-1, this refers to the San Luis Rey River
**c refers to streams or river sources; s refers to springs

Milling Tools

Metates

All of the millingstones examined from the Pauma sites appear to have oval basins which vary in depth from 1 to over 8 cm. None are flat surface slab metates. All are on partially shaped blocks of local rock, usually granitic, but occasionally local metamorphics belonging to the Julian Schist series were used. All are too heavy to be considered portable. For the most part the basins appear to be symmetrical. The round basined forms described by Greenwood from the Browne site inVentura County (1969:20) appear not to be part of the Pauma assemblage, although it is possible that some Pauma fragments could be from round rather than oval forms. Several of the Pauma specimens have secondary wear surfaces (platforms) marginal to the basin. One specimen from SDi-267 has a small groove pecked around the basin. Of the 58 or so specimens known for the described Pauma sites, at least three have grinding basins on both sides. Most of the basins are pecked. At least three complete specimens have been "killed" and have plugs knocked from the center of the basin. It is likely that several of the fragments may also represent "killed" specimens. Plate 9 illustrates some of the Pauma metates. Item 9A shows a killed specimen at site SDi-505 circa 1948. This artifact was left on the site and has, of course, disappeared. Item 9B is a killed deep basined metate from site SDi-505 which was collected and is available for study purposes. Item 9C was taken from the Pauma component, test pit 3, SDi-682. It was inverted over the poorly preserved remains of a burial.

Manos

Manos represent the most common element in the Pauma inventory (both in terms of numbers and distribution). Only one site (Rincon-300) did not have manos associated, and it is possible that this site should not really be included in these Pauma series.

Although Pauma Complex manos range from poorly developed, unshaped unifacial forms to shaped bifaces with edge grinding, the majority appear to be well developed, and shaped bifacial specimens are common. Most of the specimens observed were pecked on one or more surfaces. Occasionally, pitted forms are present. There is considerable evidence for edge grinding and it is possible that some processing in the basin metates was done at least in part with the edge rather than with the regular mano surfaces. Several specimens have "beveled" or angled surfaces that are suitable for use in a curved basin. A number of manos have battered ends and certainly had been used as hammers. Granitic rock was favored for manos, but schist and other local metamorphic rock was often used.

Plate 8 illustrates typical mano forms from some Pauma sites.

TABLE 2
ARTIFACT INVENTORY FOR PAUMA SITES

Site SDi-505 (Rincon-47)

	Locus A	Locus B	Locus C	Total
Basin metates (incl. frags.)	19	1	-	20
Manos	35	7	3	45
Domed scrapers	2	-	1	3
Irregular domed scrapers	5	-	-	5
Heavy flake scrapers	4	-	-	4
Flake scrapers	4	-	2	6
Scraper planes	9	1	1	11
Hammer grinders	4	4	1	9
Core hammers	2	1	3	6
Cobble hammers	1	1	-	2
Shaped hammers	-	-	-	-
Discoidals	1	-	-	1
Perforated discoidals	1	-	-	1
Stone balls	2	-	-	2
Bifacially flaked points/knives	-	-	7	7
Smoothing stones	6	-	-	6
Bone tools	-	-	1	1
Spokeshave scrapers	1	-	-	1
Worked flakes	4	-	3	7
Used flakes	11	-	6	17
Cores	4	-	2	6

Table 2 continued on next two pages. . .

TABLE 2 (continued)

	SDi-716 RIN-20	SDi-717 RIN-20A	SDi-718 RIN-20B	SDi-719 RIN-20C	RIN-20D	SDi-774 RIN-43	SDi-511 RIN-43A	SDi-510 RIN-41A	RIN-300	RIN-301	SDi-513 RIN-130
Basin metates*	4	2	5	1	-	-	-	6	-	-	2
Manos	29	12	26	3	2	-	7	14	-	3	4
Domed scrapers	-	-	-	-	-	-	-	-	-	-	-
Irreg. domed scrapers	-	-	-	-	-	-	-	2	1	-	-
Heavy flake scrapers	-	-	-	-	-	-	-	1	-	-	-
Flake scrapers	-	1	1	1	-	-	1	3	-	-	-
Scraper planes	-	-	-	-	-	-	-	1	-	-	-
Hammer grinders	-	-	-	-	-	-	-	1	-	-	-
Core hammers	-	-	-	-	-	-	-	2	-	-	-
Cobble hammers	-	-	-	-	-	-	-	-	-	-	-
Shaped hammers	-	-	-	-	-	-	-	-	-	-	-
Discoidals	1	-	-	-	-	-	-	-	-	-	-
Perforated disc.	-	-	-	1	-	-	-	-	-	-	-
Stone balls	-	-	-	-	-	-	-	-	-	-	-
Bifacially flaked points/knives	2	1	2	1	-	-	4	7	1	-	-
Smoothing stones	3	-	-	-	-	-	-	1	-	-	-
Bone tools	-	-	-	-	-	-	-	-	-	-	-
Spokeshave scrap.	-	-	-	-	-	-	-	-	-	-	-
Worked flakes	-	3	1	-	-	-	-	3	-	-	-
Used flakes	-	-	1	-	-	-	-	-	-	-	-
Cores	2	1	-	-	-	-	-	-	-	-	-

*includes fragments

TABLE 2 (continued)

	SDi-267 RIN-71	SDi- RIN-100	SDi-512 RIN-93	SDi-303 RIN-133	SDi-733 RIN-80	SDi-26 RIN-129	SDi-16 RIN-30	SDi-665 RIN-135	SDi-346 RIN-137	TOTAL
Basin metates*	5	3	2	3	1	1	3	-	-	58
Manos	24	6	3	3	1	3	4	5	9	203
Domed scrapers	-	-	-	-	-	-	1	-	-	4
Irreg. domed scrapers	2	2	4	-	-	-	-	3	4	23
Heavy flake scrapers	-	-	-	1	-	-	-	-	-	6
Flake scrapers	1	1	-	-	-	-	-	1	2	18
Scraper planes	-	-	-	-	-	-	-	-	-	12
Hammer grinders	-	-	-	-	-	-	-	-	-	10
Core hammers	3	-	-	-	-	-	-	-	2	13
Cobble hammers	-	-	-	-	-	-	-	-	-	2
Shaped hammers	-	1	-	-	-	-	-	-	-	1
Discoidals	1	-	-	-	-	-	-	-	-	3
Perforated discoidals	-	1	-	-	-	-	-	-	-	3
Stone balls	-	1	-	-	-	-	-	-	-	3
Bifacially flaked points/knives	-	-	1	-	-	-	-	1	-	27
Smoothing stones	1	-	-	-	-	-	-	-	-	11
Bone tools	-	-	-	-	-	-	-	-	-	1
Spokeshave scrapers	-	-	-	-	-	-	-	1	-	2
Worked flakes	-	-	-	-	-	-	-	4	-	18
Used flakes	-	1	-	-	-	-	-	3	-	22
Cores	1	-	-	-	-	-	-	-	-	10

*includes fragments

TABLE 3
WEIGHT IN GRAMS BY MATERIAL PER SITE

	SDi-346 RIN-137	SDi-665 RIN-135	SDi-505 RIN-47A	SDi-505 RIN-47B	SDi-505 RIN-47C
Basalt	95	77	800	--	518
Felsite	37	38	222	--	96
Quartz	28	--	55	--	6
Cryptocrystalline	--	--	14	--	--
Other	19	80	61	--	115

TABLE 4
ARTIFACTS FROM SDi-308 TEST TRENCH

Basin metates (includes fragments)	13 (killed 1)
Manos	8
Scraper planes	2
Worked flakes	2

TABLE 5
ARTIFACTS FROM SDi-682, TEST PIT 3, PAUMA COMPONENT
(30-66" levels)

Basin metates (includes fragments)	5	Core hammers	3
Manos (includes fragments)	9	Bifacially flaked point (fragment)	1
Domed scrapers	-	Smoothing stone	1
Irregular domed scrapers	2	Bone tools (awl fragments)	5
Heavy flake scraper (fragment)	1	Cores (Misco)	2
Scraper plane (fragment)	1	Other (pitted disc)	1
Hammer grinders	2	Chipping waste	present

TABLE 6
ARTIFACTS FROM TEST PIT 1, SANTA MARGARITA-1

Basin metates (fragments)	2
Manos (fragments)	8
Core hammers	1
Cobble hammers	1
Worked flakes	4
Used flakes	2

Scraping Tools

Although not numerically plentiful, it seems clear that scraping tools are an important part of the Pauma inventory. The sample size precludes any serious attempt to sort out meaningful formal variations within the several general categories proposed for the aggregate collection (domed scrapers, irregular domed scrapers, heavy flake scrapers, flake scrapers and scraper planes).

Domed scrapers

Artifacts in this category are well made tools with plano-convex cross-sections. The outline forms tend to be oval or round. The planar surface is usually formed of a single flake scar and flakes have been removed from most of the upper surface and most if not all of the circumference of the planar surface. This artifact is illustrated in Plate 1.

Irregular domed scrapers

Artifacts in this category typically have irregular outline forms and variable plano-convex to tabular cross-sections. The planar surface is formed by the removal of one or more flake scars. The upper surface often exhibits minimal shaping or modification, and there is usually working or modification around only part of the circumference of the planar surface. Irregular domed scrapers are illustrated on Plates 1, 2 and 6.

Heavy flake scrapers

Heavy flakes of various shapes with minimal shaping or modification comprise this category. All have irregular outline forms and cross-sections. Most are made of basalt or a similar fine grained volcanic rock. Heavy flake scrapers from several Pauma sites are shown in Plate 3, Items A, B, C and D, and Plate 6, Item H.

Flake scrapers

Smaller flakes with evidence of modification or use on one or more edges have been designated as flake scrapers. These tend to be casual tools and are generally irregular in outline and section. Artifacts typical of this category are shown on Plate 3, Item F and Plate 6, Item F.

Scraper planes

Scraper planes as defined here are simply larger versions of domed and irregular domed scrapers. They tend to be roughly plano-convex in cross-section, but can be tabular or irregular as long as there is a developed planar surface and indications of use as a planing type tool. Although scraper planes are sometimes quite finished

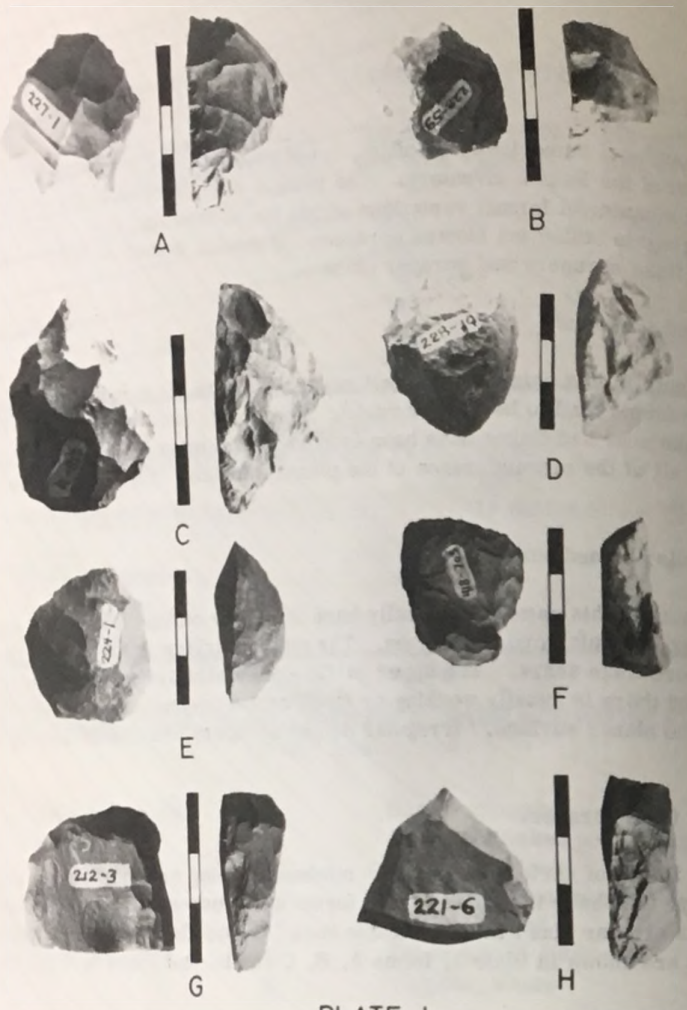


PLATE I

Domed Scrapers and Irregular Domed Scrapers from Pauma Complex Sites
(A) Felsite, Site SDi-16. (B) Rhyolite material, Site SDi-505. (C) Felsite, Site SDi-505. (D) Porphyritic cobble fragment worked around 2/3 rounds of its planar surface circumference; Site SDi-505. (E) Heavy basalt flake fragment, used or modified around 1/4 of its planar surface circumference. (F) Fragment of a heavy basalt flake, used or modified around the entire circumference of the planar surface; Site Rincon-300. (G) Fragment of a heavy felsite flake, roughly tabular section; about 1/2 of the margins of the planar surface have been modified or used; Site SDi-665. (H) Fragment of a heavy felsite flake, tabular section; 1/2 of the remaining circumference of the planar surface has been worked; may be a fragmentary specimen; Site SDi-346.

and conventionalized, this is not necessarily the case for the Pauma sites in general and very crude and poorly developed implements are not uncommon. Most of the artifacts in this category are made on cores, but they could as well be made from heavy flakes, and in some instances the dividing line between some of the heavier flake and domed scrapers and the smaller planes is not that clear. Scraper planes are shown in Plate 3, Item E and Plate 4, Items A, B, C, D, E and F.

Hammer Grinders

Hammer grinders as defined here are cobbles or cores of various shapes and sizes marked by evidence of pounding (batter marks) and by wear facets on some edges or surfaces. In some cases, artifacts in this category resemble crude scraper planes with batter marks on one or more surface. In other instances, the artifact more nearly resembles a typical core or cobble hammer except for a crude planar surface with some evidence of wear. Hammers, hammer grinders, and some categories of scraper planes may well form part of a continuum and in many cases are obviously multi-purpose tools. Hammer grinders are illustrated on Plate 5, Items A, B, D and G. Item C may be a hammer grinder as well, but it is marginal.

Hammers

Cobbles, cores and heavy flakes used for pounding are designated hammers. Artifacts in this category are characterized by batter marks on one or more surface, edge or flake scar intersection. A variety of material is represented with quartz and heavy metamorphic rocks predominating. Three subcategories are suggested:

Core hammers

Typically, these are fist size cores with batter on one or more edges or surfaces. Core hammers are illustrated on Plate 5, Items C, E and F, and Plate 6, Items G and I.

Cobble hammers

Small cobbles or cobble fragments with evidence of battering on one or more edge or surface. No other modification or shaping is usually present. No cobble hammers are illustrated.

Shaped hammer

Typically, artifacts similar to this category are roughly discoidal cores or heavy flake fragments with batter around the margins. The point here seems to be to produce a narrow pounding surface, so that blows can be directed to specific locations with some precision. Artifacts in this category in other contexts often grade into a category of heavy core tools designated "choppers." Hammers with this configuration are often quite small. Only one shaped hammer was recovered from the Pauma sites presently under discussion. Plate 7, Item A illustrates this artifact.

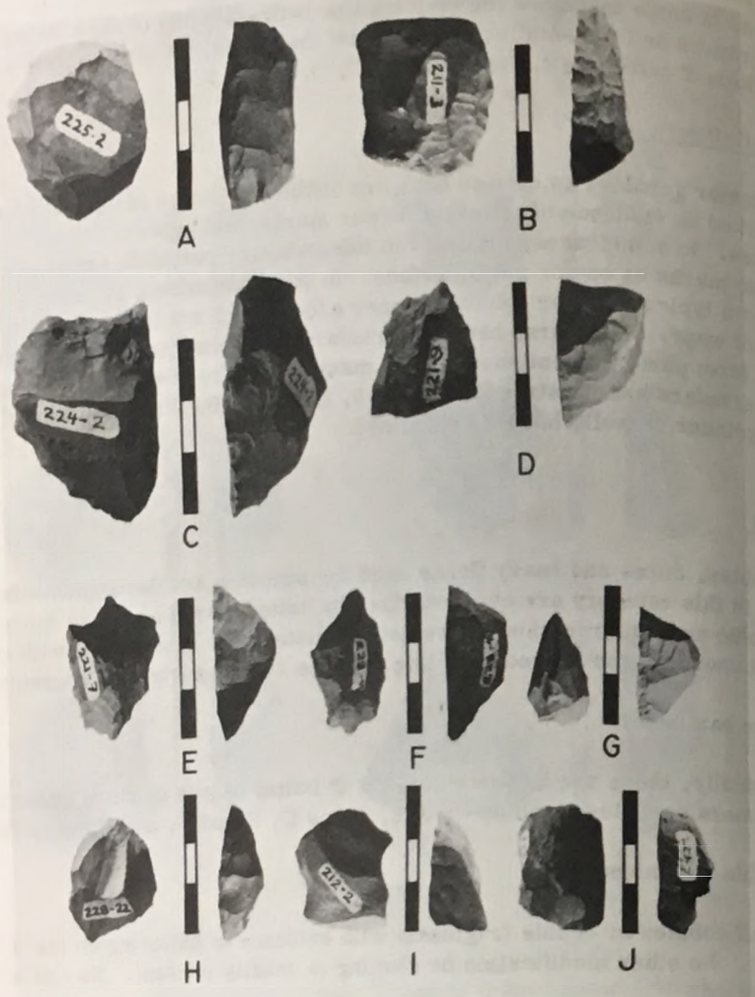


PLATE 2

Irregular Domed Scrapers from Pauma Complex Sites

Key to Plate 2

A. Heavy flake fragment of felsite, tabular section, worked around the entire circumference of the planar surface. Site SDi-512.

B. Heavy flake fragment of basalt, low domed cross-section, worked around 3/4 of the circumference of the planar surface. Site SDi-267.

C. Heavy felsite flake, irregular domed cross-section, worked around 2/3 of the circumference of the planar surface. Site Roncon-100.

D. Small core (?) of a felsitic material, irregular cross-section, about 1/2 of the circumference of the planar surface has been modified. Site SDi-346.

E. Small core (?) of felsitic material, irregular domed cross-section, has been used or modified around the entire circumference of the planar surface. Site SDi-346.

F. Small basalt core, keeled section, used or modified on about 1/2 of its planar surface circumference. Site SDi-505.

G. Small felsite core fragment, keeled section, worked or used on about 2/3 of the circumference of the planar surface. Site SDi-512.

H. Heavy felsite flake fragment, irregular-cross section, used or modified on about 1/2 of the extant circumference of the planar surface. Site SDi-505.

I. Irregular flake fragment of felsitic material, about 1/2 of the extant planar surface circumference has been modified. Site SDi-665.

J. Basalt flake fragment from some heavy tool (hammer or hammer grinder), used or modified around 1/2 of the circumference of the planar surface. Site SDi-510.

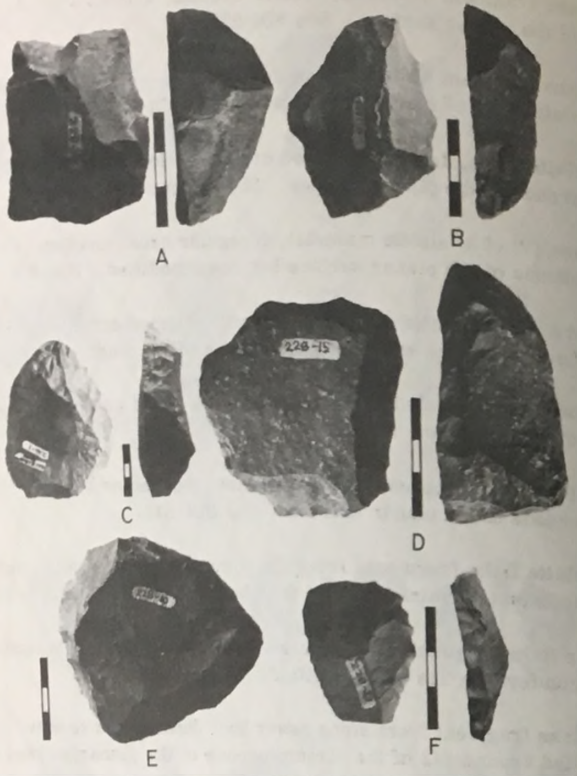


PLATE 3

Heavy Flake Scrapers and Flake Scrapers from Pauma Complex Sites

(A) Fine-grained volcanic, modification around 1/2 of its margins; Site SDi-505. (B) Basalt, worked or utilized on 1/2 of flake circumference; Site SDi-510. (C) Fine-grained volcanic with work around 3/4 of its margins; Site SDi-303. (D) Basalt, worked or used around 3/4 of its margins; Site SDi-505. (E) Basalt, evidence of use or modification around the entire margin of the planar surface; Site SDi-505. (F) Felsite, unifacial, probably made on waste flake derived from larger core or tool (sharpening flake); Site SDi-505.

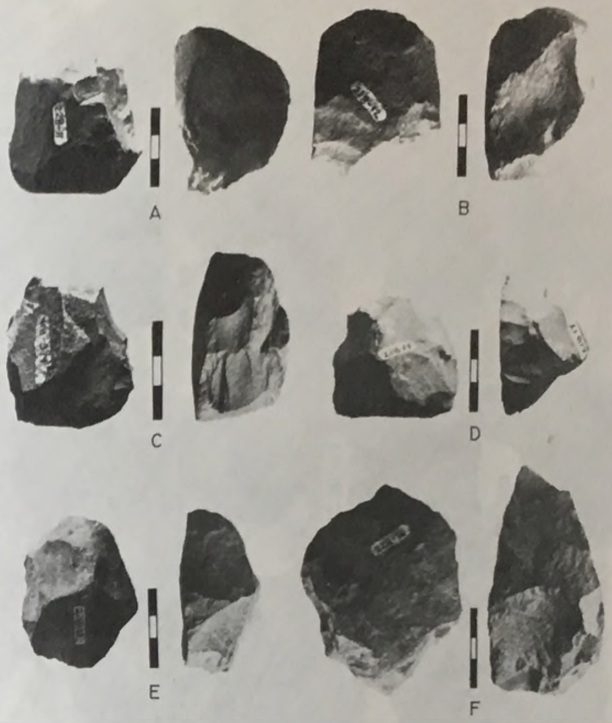


PLATE 4

Scraper Planes from Pauma Complex Sites

(A) Basalt, modified around 3/4 of its margins with well-defined wear facets on the planar surface and along portions of the working edge; a well-defined heel produced by wear appears to be the by-product of rubbing along a curved surface (metate basin?); Site SDi-505. (B) Basalt, roughly plano-convex cross-section with considerable shaping over the upper surface; wear facets well developed both on the planar and upper surfaces; Site SDi-505. (C) Felsite, roughly plano-convex cross-section and some shaping on the upper surface; entire margin of the planar surface used or modified; wear facets present on the planar surface; Site SDi-510. (D) Basalt, angular cross-section, worked or used around 2/3 of the margin of the planar surface; wear facets present on the planar surface; Site SDi-505. (E) Basalt, well-defined batter marks on one part of the upper surface suggesting either use as hammer or plane made on a discarded fragment of a hammer; some batter and well-defined wear facets along portions of the planar surface; well-developed "heel," about 3/4 of the margin of the planar surface used or modified; Site SDi-505. (F) Unidentified metamorphic rock, irregular core fragment with modification around 3/4 of its margins, crudely made; might be classified as non-artifactual except for wear facets on the planar surface; Site SDi-505.

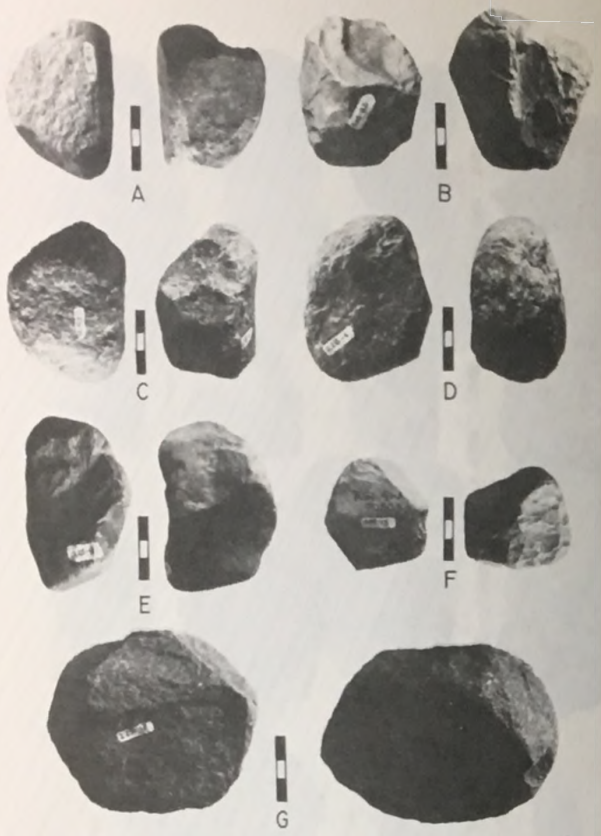


PLATE 5

Hammer and Hammer Grinders from Pauma Complex Sites

(A) Unidentified metamorphic rock, irregular cobble with batter on all flake scar intersections; rounded wear facets along portions of the planar surface; Site SDi-505. (B) Felsite cobble, batter marks on all angular edges and surfaces; evidence of wear along the margins of the planar surface; Site SDi-505. (C) Heavy metamorphic rock (unidentified), batter on several edges with possible wear facets on one flattish surface (possible or marginal hammer grinder); Site SDi-505. (D) Heavy metamorphic rock, batter marks on several surfaces and edges; clearly defined planar surface; Site SDi-505. (E) Heavy metamorphic rock (unidentified), batter and rounding of several edges; Site SDi-505. (F) Basaltic, batter on several edges; probably used as a plane at one time, then used as hammer after remaining core fragment (after numerous sharpenings) was no longer suitable for scraping; Site SDi-510. (G) Heavy metamorphic (Julian schist), batter on some edges and a well-defined planar surface with wear facets and a developed "heel." Site SDi-510.

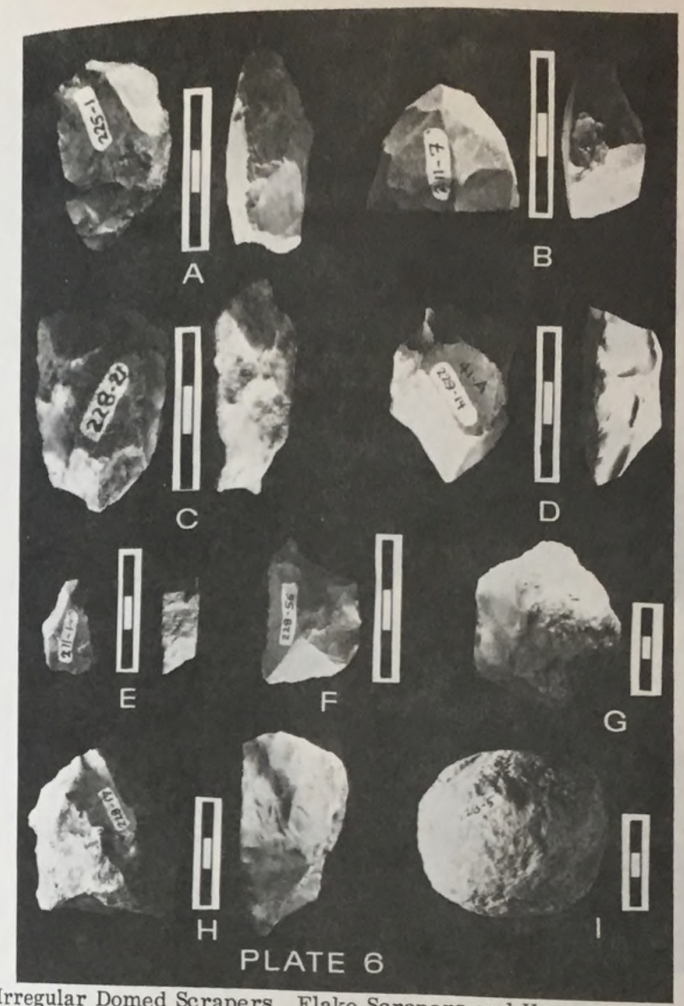


PLATE 6

Irregular Domed Scrapers, Flake Scrapers and Hammerstones from Pauma Complex Sites

(A) Heavy flake fragment (or a small core) made of a chert-like material, irregular section, used around most of the margins of the planar surface; Site SDi-512. (B) Fragment of a heavy flake of a basalt-like material; low domed, slightly tabular cross-section; about 1/2 of the extant circumference of the planar surface has been modified or used; Site SDi-267. (C) Heavy flake of a chert-like material; irregular domed section, used or modified around about 1/2 of the circumference of the planar surface; Site SDi-505. (D) Heavy felsite flake fragment with a somewhat tabular section; at least 2/3 of the margin of the planar surface has been modified; Site SDi-510. (E) Tabular core fragment of welded tuff or some similar rhyolitic material; crudely formed but modified around 2/3 of the planar surface margin; Site SDi-267. (F) Felsite, retouching along one edge and possible use modification on two other edges; probably made on sharpening flake struck from a plane or similar core tool; Site SDi-505. (G) Quartz; batter on several edges and surface; Site SDi-267. (H) Chalcedony; irregular form and working around the entire margin; Site SDi-505. (I) Quartz-feldspar; batter and rounding on all edges; Site SDi-505.

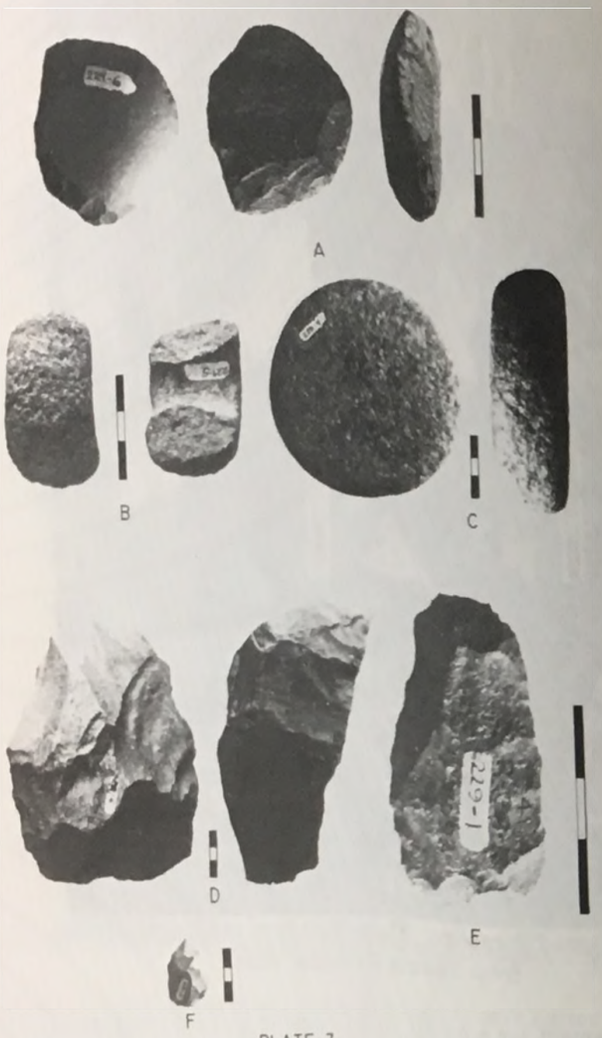


PLATE 7

Shaped Hammer, Perforated Discoidal, Discoidal, Bifacially Worked Scraper and Heavy Core Scraper from Pauma Complex Sites

(A) Dense felsitic material (?), small split cobble with battering around 2/3 of its margins; Site Rincon-100. (B) Vesicular basalt; Site Rincon-100. (C) Granite, slightly beveled edge; Site SDi-505. (D) Heavy scraper, several planar surfaces and working edges; SDi-718. (E) Basalt porphyry, bifacially flaked, blunt reworked ends; Site SDi-510. (F) Domed scraper.

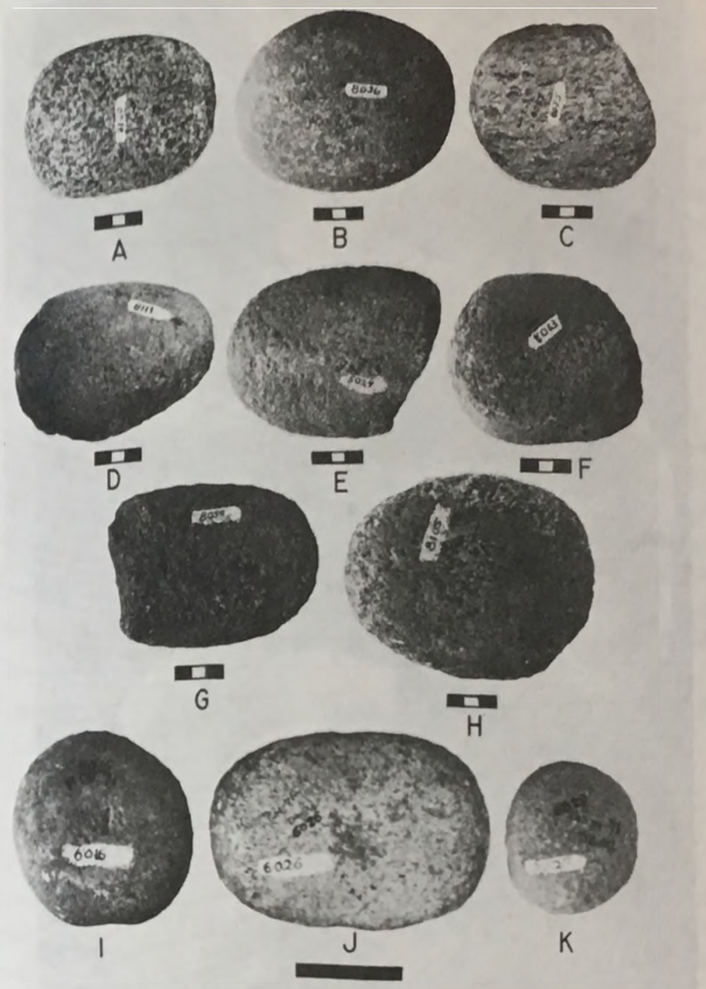
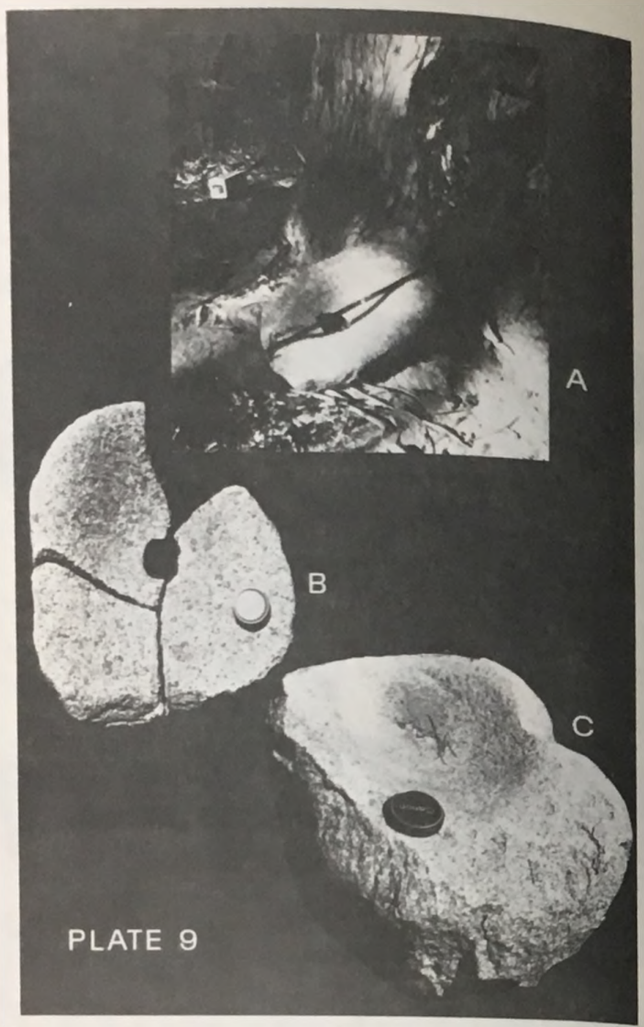


PLATE 8

Manos, Pitted Manos, and Crude Stone Ball from Pauma Complex Sites

(A) Granitic biface, shaped, edge grinding; Site SDi-718. (B) Metamorphic, uniface, minimal shaping; Site SDi-717. (C) Gneiss, uniface, minimal shaping; Site SDi-717. (D) Granitic, biface, some sharpening, wedge section end batter; Site SDi-718. (E) Gneiss, biface, beveled surface, end batter; Site SDi-505. (F) Granitic biface, edge grinding, end batter; Site SDi-717. (G) Granitic, biface, shaped, edge grinding; Site SDi-717. (H) Granitic, biface, possible shaping, end batter; Site SDi-718. (I) Pecked discoidal (pitted); Site SDi-267. (J) Granitic, biface, shaped, pitted; Site SDi-267. (K) Granitic, shaped, stone ball; Site SDi-267.



Basin Metates from Pauma Complex Sites

(A) A "killed" metate; Site SDi-505. (B) A "killed" deep-basined metate; Site SDi-505. (C) Taken from test pit 3, SDi-682; found inverted over the remains of a burial.

Discoidals

Round disc-shaped objects of various sizes generally with parallel surfaces and edges comprise this category. Convex edges are not unknown, and one specimen has a beveled edge. In some instances, discoidals appear to be well made and finished round manos. However, they do not always exhibit evidence of wear or use. Some discoidals are pitted on one or more surface. This is not a common artifact, but it is clearly part of the Pauma Complex inventory. One Pauma Complex discoidal is shown on Plate 7, Item C. A poorly finished pitted discoidal is shown on Plate 8, Item I.

Perforated Discoidals

Several disc-shaped artifacts have been recovered or reported from Pauma Complex sites which are biconically drilled. Artifacts with this configuration in other contexts are often referred to as donut stones. The size and degree of finish of these artifacts in the Pauma inventory varies considerably, and no function is suggested. Two "donut" stones were recovered from Pauma site surveys, and a third was found by the owner of site SDi-505. The SDi-505 artifact was described as a "little stone donut." It was at one time in the possession of W. E. Coleman, Pauma Valley, California, but has subsequently been lost (personal communication, W. E. Coleman 1948).

One perforated discoidal from a Pauma Complex site is illustrated on Plate 7, Item B.

Stone Balls

Rounded ball-like groundstone artifacts have been recorded or reported on several Pauma Complex sites. These are usually made of granitic rock. There is some variation in size, but no function is suggested. A crude stone ball is illustrated on Plate 8, Item K.

Smoothing Stones

Small cobbles with evidence of wear or polish on one or more surfaces. These are similar to manos, except for the size and general lack of shaping. Smoothing stones are not illustrated.

Bifacially Flaked Artifacts

A total of 23 items is included in this catchall category made up of artifacts believed to represent projectile points or knives. Most of the specimens are fragmentary and there is little basis for a meaningful classification. Brief descriptions of the

specimens are provided below.

a. A shouldered or tapered stem point with a heavy angular cross-section. This item is not illustrated. Site Rincon-300.

b. A triangular point or knife made of a jasper-like cryptocrystalline material. It is illustrated in Figure 1-I. Site SDi-511.

c. A basal fragment with rudimentary side notches. Made of chert or chalcedony. Illustrated in Figure 1-E. Site SDi-665.

d. A side notched basal fragment made of quartz. Illustrated in Figure 1-F. Site SDi-510.

e. Probable base fragment made of white cryptocrystalline material. Thin cross-section suggests cutting function. Illustrated in Figure 2-C. Site SDi-510.

f. Probable basal fragment made of a chert-like material. Illustrated in Figure 2-D. Site SDi-717.

g. Heavy midsection fragment. Very finely flaked. Illustrated in Figure 2-F. Site SDi-719.

h. Heavy point tip made of quartz. Illustrated in Figure 1-B. Site SDi-512.

i. Point tip made of heavily patinated (burned?) obsidian. Illustrated in Figure 1-C. Site SDi-718.

j. Heavy point or knife tip made of basalt. Illustrated in Figure 1-A. Site SDi-511.

k. Point tip made of agate. Illustrated in Figure 2-G. Site SDi-511.

l. Point or knife tip (base?) made of black chert. Illustrated in Figure 1-J. Site SDi-505.

m. Point tip with heavy section. Made of quartz. Illustrated in Figure 1-H. Site SDi-510.

n. Heavy sectioned point tip made of quartz. Illustrated in Figure 1-G. Site SDi-716.

o. Point tip made of quartz. Illustrated in Figure 1-D. Site SDi-716.

p. Point or knife midsection fragment made of quartz. Not illustrated. Site SDi-505.

q. Point or knife midsection made of quartz. Not illustrated. Site SDi-505.

r. Point or knife midsection fragment made of chert or agate. Illustrated in Figure 2-A. Site SDi-505.

s. Point or knife midsection fragment made of chalcedony. Not illustrated. Site SDi-511.

t. Point or knife midsection fragment made of basalt. Illustrated in Figure 2-B. Site SDi-718.

u. Point or knife midsection fragment made of a rhyolitic material. Illustrated in Figure 2-E. Site SDi-510.

v. A bifacially flaked implement made of basalt porphyry with blunt reworked ends suggesting use as a scraper. Illustrated in Plate 7, Item E. Site SDi-510.

w. A roughly shaped quartz biface with a heavy cross-section best suited for some kind of drilling function. Illustrated in Figure 2-H. Site Rincon-100.

Twelve of the items listed are made of material generally found in the larger northern San Diego County area. One item (Figure 1-I) may be made of local material, although its source is not known to the writer. The remainder of the artifacts in this grouping are made of materials generally believed to be exotic. Some of the chert-like material could be obtained from the Franciscan formations to the north. The agate, rhyolite and obsidian may have a desert origin.

In addition to the artifacts described above, one specimen was recovered from site SDI-718 that appears to be a heavy chopper-like tool. Closer examination reveals that it is in fact a heavy scraper with several planar surfaces and working edges. Overall this artifact is similar to some of the pulping planes described by Rogers (1939:50). It is much larger than any other scraper or plane-like artifact from any of the sites included in this study. The artifact is shown on Plate 7, Item D. To illustrate the difference in scale between this large plane and the domed scrapers believed to be typical of the Pauma Complex, the two are illustrated at the same scale (domed scraper shown in Plate 7, Item F).

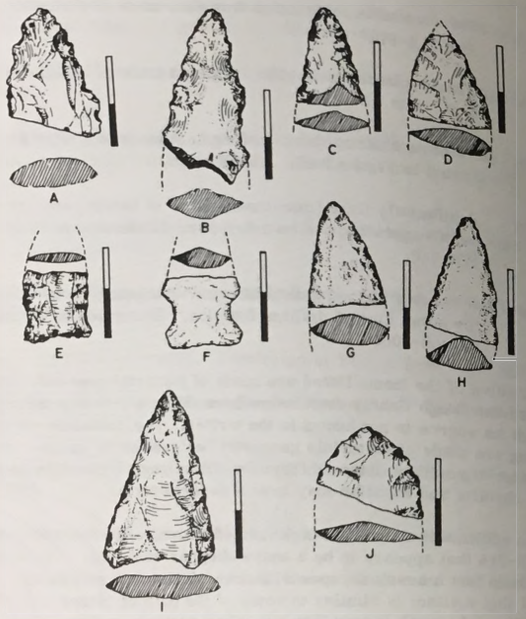


FIGURE 1

Bifacially Flaked Implements from Pauma Complex Sites
(Knife and Projectile Points)

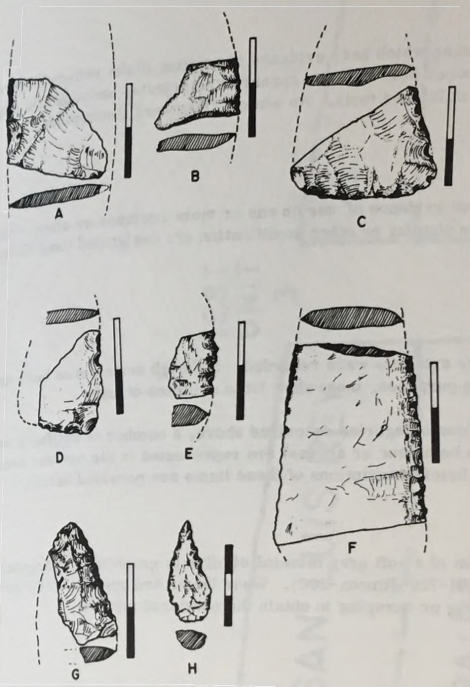


FIGURE 2

Bifacially Flaked Implements from Pauma Complex Sites
(Knife and Projectile Point Forms)

Spokeshave Scraper

Two artifacts were recorded that appear to fit this category. Both are generally unmodified flakes, except for a half circle notch flaked into one edge. The size here is about what one would expect for dart or similar sized shafts. Not illustrated.

Worked Flakes

Various sized flakes which have evidence of working (flake removals) on one or more surfaces are grouped here. These appear to be rejects, undiagnostic fragments of other artifacts, or unfinished tools. No worked flakes are illustrated.

Used Flakes

Flakes which have evidence of use on one or more surfaces or edges, but no indication of deliberate shaping or other modification are designated used flakes. None are illustrated.

Cores

Several core-like artifacts were recorded. Although some cores here may have been used for scraping purposes, most show little evidence of use.

Besides the various categories described above, a number of artifacts were recovered that appear to be unique or at least are represented in the present sample by only one specimen. Brief descriptions of these items are provided below:

Paint stone

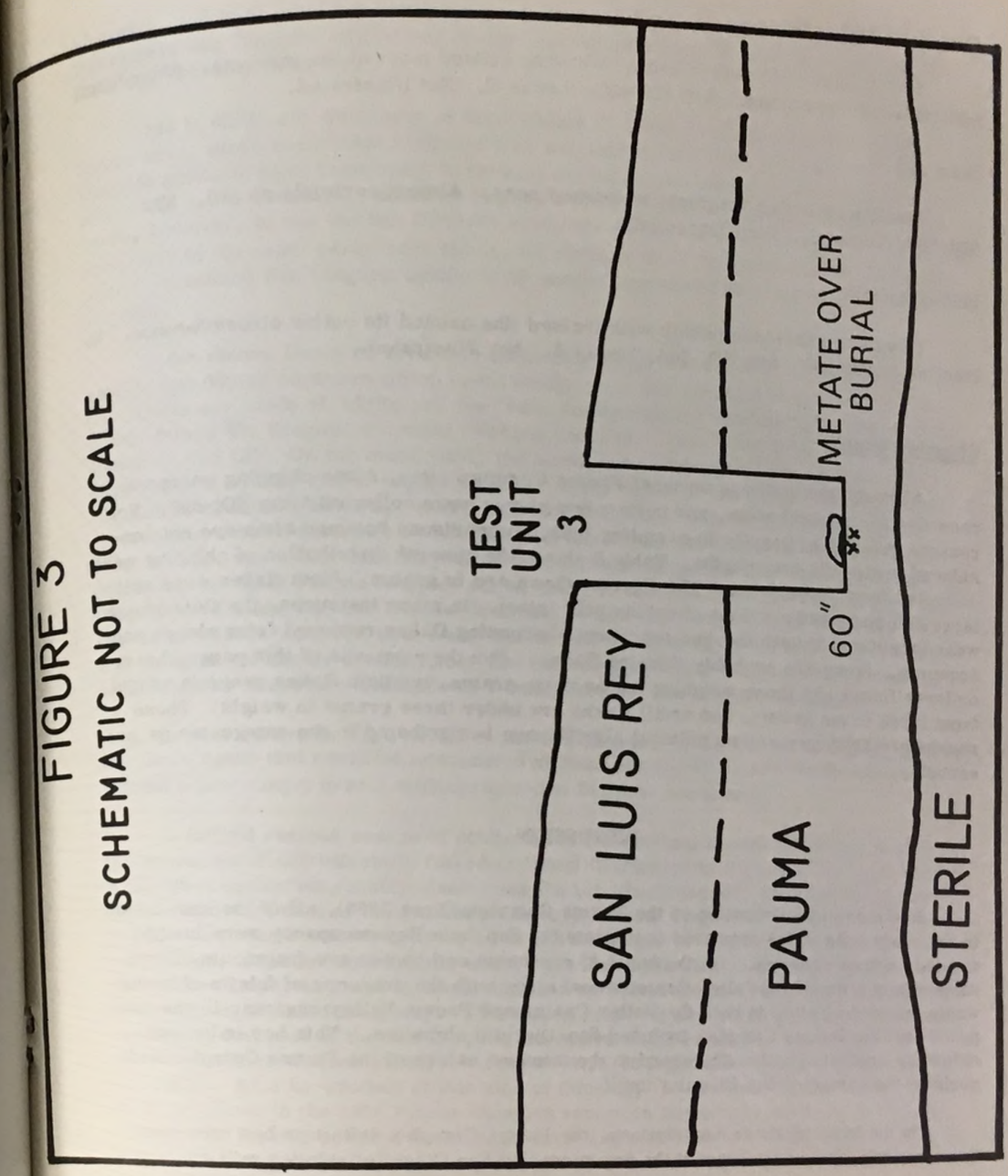
A single fragment of a soft gray mineral similar to graphite or manganese was recovered from Site SDi-719 (Rincon-20C). Wear facets are present which probably are the result of rubbing or scraping to obtain the powdered mineral.

Small polished slab

A fragment of schist which appears to be part of a larger object (palette ?). It has a smooth polished surface marked by visible striations and a small remnant of a worked beveled edge. Site SDi-346 (Rincon-137). Not illustrated.

Worked slate

A piece of slate-like material with a polished rounded edge. Striations are easily seen and there is no question but that this is the result of cultural modification. No function is suggested. Site SDi-719 (Rincon-20C). Not illustrated.



Schematic Showing Relationship of Pauma and San Luis Rey Components at SDi-682 (Pankey)

Cortex backed scraper

Heavy flake with cortex back. Working around most of the margins. Wear facets and striations on cortex. Site SDi-505, Locus C. Not illustrated.

Bone awl

Small midsection fragment of worked bone. Almost certainly an awl. Site SDi-505, Locus C. Not illustrated.

Incised pebble

Irregular sandstone pebble with incised line around its entire circumference. No function suggested. Site SDi-505, Locus A. Not illustrated.

Chipping Waste

Although not common on most Pauma Complex sites, some chipping waste was recorded for several sites, and quite a few pieces were collected from SDi-505. For reasons relating primarily to sampling bias, comparisons between sites are not considered especially meaningful. Table 3 shows the general distribution of chipping waste collected from three sites. The figures shown are in grams. Most flakes were quite large and many had portions of cortex still intact. In many instances, the flakes have wear facets and striations, and represent sharpening flakes removed from planes and scrapers. Some are probably thinning flakes. For the purposes of this paper, heavy or large flakes are those weighing ten or more grams, medium flakes range in weight from three to ten grams, and small flakes are under three grams in weight. These ranges are arbitrary and no cultural significance is attributed to the categories as presented.

DISCUSSION

In the original definition of the Pauma Complex (True 1958), all of the known sites in the study area which appeared to predate the San Luis Rey occupancy were lumped together as one complex. On the basis of crescents and one or two fragments of leaf shaped points (found on Valley Center sites) along with the presence of felsite chipping waste on several sites in both the Valley Center and Pauma Valley regions, it was proposed that the Pauma Complex included San Dieguito elements. This has led to considerable confusion both with regard to the intended nature of the Pauma Complex and perhaps the nature of San Dieguito itself.

On the basis of these descriptions, the Pauma Complex definition has been used by some investigators to support the argument that San Dieguito includes millingstone

elements, and in at least one instance, to suggest that all sites with Pauma-like elements have San Dieguito affiliations of one kind or another. Both of these interpretations are probably in error.

This is not to say that there is no evidence of a San Dieguito presence in the larger area, since occasional artifacts with marked similarities to diagnostic San Dieguito artifacts have been found in several northern San Diego County contexts (outside of the areas previously noted by Rogers 1929:454-467). It seems to make more sense, however, to see the San Dieguito elements as part of a previous or overlapping occupancy of the same geographic space, or perhaps in some instances as re-utilization of occasional San Dieguito artifacts by people associated with the millingstone complex.

In the Pauma Complex inventory presently being considered, there are, for example, two domed scrapers which could easily be of San Dieguito origin (Plate 1-A, C). These are made of felsite and they have configurations similar to scrapers found in non-mixed San Dieguito contexts (Warren and True 1961: Plate 5-G; Warren 1966: Plates 11 and 13). On the other hand, the same domed scraper forms (made of felsitic rock) are found rather regularly in La Jollan sites for which no San Dieguito affiliation is claimed (Shumway, Hubbs and Moriarty 1961: Figure 28, B; Crabtree, Warren and True 1963: Plate 5-A). Besides the rather ambiguous domed scraper associations, and other than the presence of felsitic chipping waste (usually in small quantities) on most Pauma Complex sites, there is no real basis for suggesting a San Dieguito affiliation with the Pauma Complex. Since the Pauma people probably had access to felsitic material both from the natural sources and from San Dieguito campsite remains, it hardly seems likely that the chipping waste itself can be seriously considered as necessary evidence of a contemporary San Dieguito presence.

In short, there is little evidence for San Dieguito in the Pauma Complex inventory, and those items that could be interpreted as San Dieguito-like, are easily explained without postulating a hybrid millingstone-San Dieguito occupancy.

A second serious source of confusion in the original Pauma definition relates to the conventionalized bifacially flaked artifacts illustrated in Figure 3 (A, B, C and D). Although it seems reasonably clear from the text that bifacially flaked artifacts were not an important part of the Pauma inventory, several diagnostic points were illustrated in addition to the crescents attributed to San Dieguito. If only the illustrations were considered, a reader could easily enough get the impression that bifacially flaked artifacts were important, and by some strained extension assume that they were part of a San Dieguito oriented inventory. This notion might well be reinforced by a careless reading of that part of the San Dieguito literature which relates to Locus II at the Harris site (see Warren 1968:3; Warren 1966:15-18 for a description of the Locus II situation). As a by-product of this kind of thinking, the presence of any form similar to those shown in the 1958 Pauma Complex report on almost any northern San Diego County site lacking pottery, bedrock mortars and a developed midden could be used as a basis for suggesting Pauma Complex, and by extension San Dieguito affiliations.

On the other hand, since we do not yet have an adequate sample from a series of excavated Pauma Complex sites, the exact relationship of these artifacts is not entirely clear. The presence of such artifacts in surface contexts on several inland sites attributed to the Pauma Complex is, however, consistent with the suggested identification of the Pauma Complex with the coastal La Jollan complexes and similar point forms are known from several La Jollan sites (Moriarty, Shumway and Warren 1959: Figure 5, Sorrento Valley site, etc.).

Warren (1968:2-3) suggests that this aspect of the coastal prehistory be attributed to an intrusive pattern with desert origins (Campbell intrusion). This interpretation is consistent with the data from Locus II at the Harris site which Warren sees as a site unit intrusion (1968:3), and it makes sense in terms of other northern San Diego County situations, including the Pauma Valley area.

With this in mind, two sites originally included in the Pauma Complex series have been set aside as possible manifestations of a Campbell intrusion (sites Rincon-132 and Rincon-95 in the 1958 report). Those artifacts in the remaining Pauma Complex sites which are categorized as conventionalized bifacially flaked tools can be sorted into two groups. The first is a nondescript aggregate of midsection and tip fragments usually made of quartz or other local rock (Items A, B, D, G and H on Figure 1 [this report], which are believed to be more or less typical of points and knives attributed to La Jollan and other millingstone using cultural patterns in southern California). The second group includes an equally small number of point and knife bases, midsections, and tip fragments, usually made of cryptocrystalline rock believed to be of non-local origin (Items C, E, I and J in Figure 1, and items A, B, C, D, E and G in Figure 2). Item F in Figure 1 is made of quartz, but is believed to fit in with the second grouping because of its form.

Although it is not especially convincing because all of the artifacts noted were recovered from surface contexts, it is probably worth noting that the artifacts in the second group tend to be concentrated in particular loci within the larger distribution.

For example, SDi-774, which extends for several tens of meters along the upper surface or terrace of Marion Creek, did not include any artifacts which fall into this group. On the other hand, several were recovered from SDi-511 which is only a few meters away and is actually best seen as another locus of SDi-774. For site SDi-505, which has three separable loci, all of the artifacts so far recovered which fit this latter pattern were taken from Locus C. This may be fortuitous and reflect the nature of the sample rather than any cultural reality. It is, however, worth noting, and may be of some significance when seen in conjunction with local sites which appear to have neither Pauma Complex or San Luis Rey affiliations.

Regardless of the interpretation (whether or not one accepts the idea of a Campbell intrusion), it is clear that conventionalized projectile point and knife forms are not common elements in the Pauma Complex inventory.

The point of all this is simply that (1) the Pauma Complex inventory is very similar to that of the adjacent coastal La Jollan, which is generally believed to date from about 5500 B.C. to A.D. 1 (Warren 1968:2), and some as yet undefined but close relationship is proposed between the two; (2) the Pauma Complex as defined here includes very little actual evidence of San Dieguito elements, although it is likely that San Dieguito people did utilize the same area on some basis or another; and (3) there may be evidence in the area (sometimes associated with Pauma Complex sites) of the Campbell intrusion proposed by Warren.

Space limitations preclude further discussion of the various issues raised by these suggested relationships. Clarification of the many issues inherent in these propositions will require a great deal more fieldwork and considerable data from excavated contexts over a wide range of local situations.

Further discussion of some spatial and contextual relationships relative to Pauma Complex and San Dieguito sites over a wider geographic area is presently in preparation. Hopefully these additional data in conjunction with those provided in the present paper will contribute in some small way to the clarification of at least some aspects of our knowledge of the inland millingstone based complexes in San Diego County.

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