

RELATIONSHIPS OF PREHISTORIC CULTURES
OF COASTAL MONTEREY COUNTY, CALIFORNIA

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An initial report which may be used by field workers in adjacent areas is often worthwhile before an investigator considers his work complete. A preliminary statement seems particularly necessary in this case, for the writer is unlikely for some time to undertake further work in the area considered.

The following paper is not intended to give a summary of field observations. It deals instead with an important point concerning Central California archaeology, that is, the basic unity of the prehistoric cultures which occupied the littoral between northern Los Angeles and northern Monterey counties.

Between 1947 and 1950 the writer collected data concerning the archaeology of the coastal region of northern Monterey County extending from Monterey south to Post's near Big Sur. The area is that littoral zone which continues from 100 to 150 miles southeast of San Francisco. (1) This survey was aided by earlier manuscripts which had been prepared by Kroeber, Gifford, Golomshtok, Hill, Wedel, Wood, Edna Fisher, and Beardsley and Wallace (2), and by excavation notes on Mnt-108 (3) which have been published by Beardsley. (4)

Further archaeology has been carried on since the termination of field observations by the writer in 1950. Mr. Robert Greengo, in August, 1950, took soil samples from several sites in the Elkhorn Slough region of northern Monterey County. His investigation of the relative percentages of marine shell species in coastal middens has been published (Greengo, 1951, p. 11). Miss Sylvia Broadbent resurveyed the Carmel region during the summers of 1951 and 1952 and sampled two sites in the adjacent locale. More extensive excavations have been made recently in three areas of Monterey County. Two sites on Willow Creek in southern Monterey County (Mnt-281 and -282) were excavated by the University of California Archaeological Survey in the spring of 1951, by the Summer Field Session class of the University of California under Dr. R. F. Heizer in the summer of 1951, and by the same class in the summer of 1952 under the direction of Dr. Richard Beardsley. Adjacent regions were surveyed during the field periods at Willow Creek. A site (Mnt-250) in a second region was excavated in spring, 1953, by the University of California Archaeological Survey (Meighan, 1955). Crews under Miss Broadbent dug part of the aboriginal habitation area at Carmel Mission (Mnt-18) during the summers of 1954 and 1955. The following paper refers to trait occurrences noted at these excavations, especially at Mnt-281 and -282. The reader must await other publications which will consider the mass of data collected by recent expeditions.

The writer did not carry out excavation between 1947 and 1950, when he was doing reconnaissance. The notes and artifacts which had been collected by early August, 1950, when the writer left the Monterey area, appeared to lack order. The lack of good published material on the Santa Barbara sequence had deterred comparative work. Olson's (1930) definition of a Santa Barbara sequence had been too generalized to be useful for comparison, while David Banks Rogers (1929) had presented a weakly-defined culture sequence, with most details provided by photographs. Orr's (1943) discussion of Mescalitan Island considered only the latest part of the Santa Barbara sequence. The Point Sal sequence (SBa-125), presented by Carter (1941), was unfortunately based on very limited excavation and is also poorly defined. In late August, 1950, the writer visited and actively participated in excavations at two sites in northern Santa Barbara County, at the margins of the region of the definition of Santa Barbara culture (5), and here gained a more detailed knowledge of Santa Barbara material. The writer then recognized parallels with the prehistory of the Monterey region.

The artifact yield during archaeological reconnaissance in northern Monterey County was low compared to other California sites. The average daily surface yield in the Monterey region was about two artifact fragments per man. This low yield was not due to stripping by local collecting, for between 1946 and 1950 only about 50 man-days of surface collecting was conducted by known local collectors on the over 150 known sites in the 50-mile coastal stretch between Monterey and Post's. Contrary to this observation of a low yield, Dr. R. F. Heizer informed me that the artifact recovery per cubic yard at Willow Creek (Mnt-281 and Mnt-282), 30 miles south of the area just mentioned, was relatively high. He suggested that the yield at larger sites adjacent to Willow Creek may be considerably lower, although exact data are not available.

Monterey Traits Shared with Santa Barbara

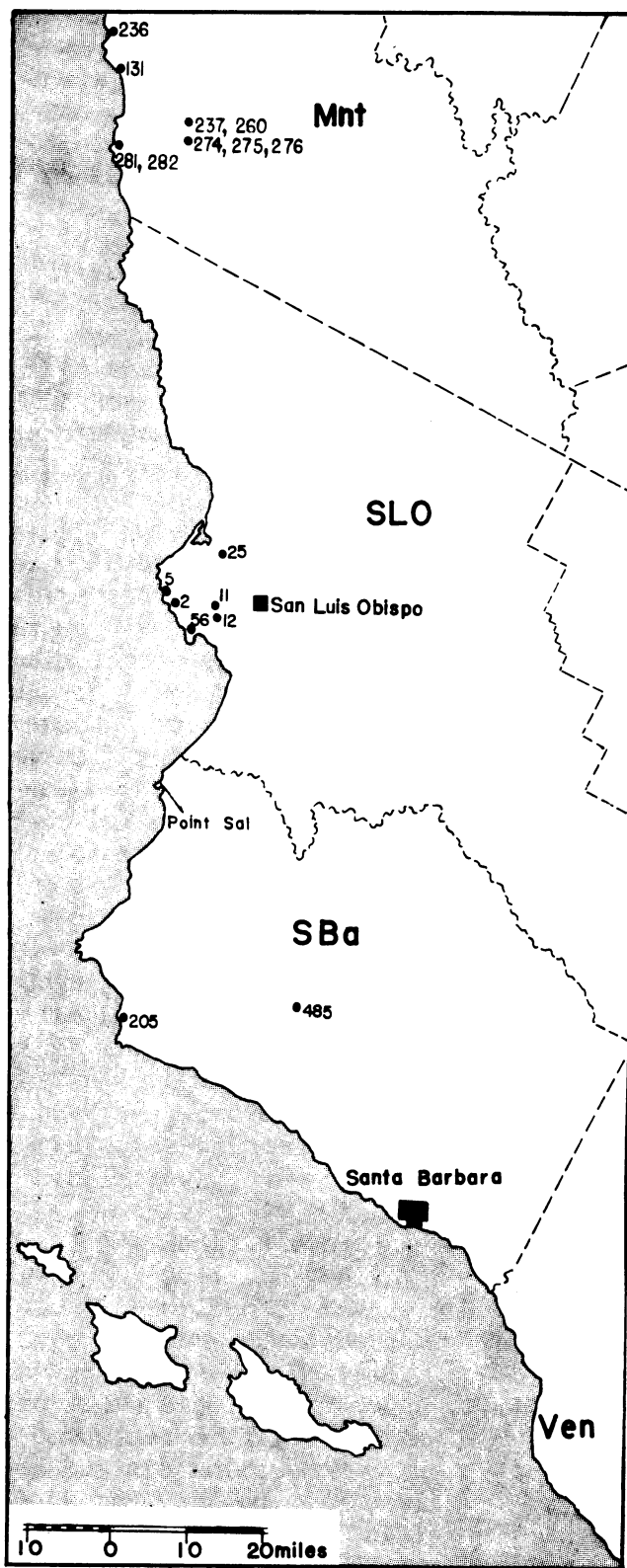
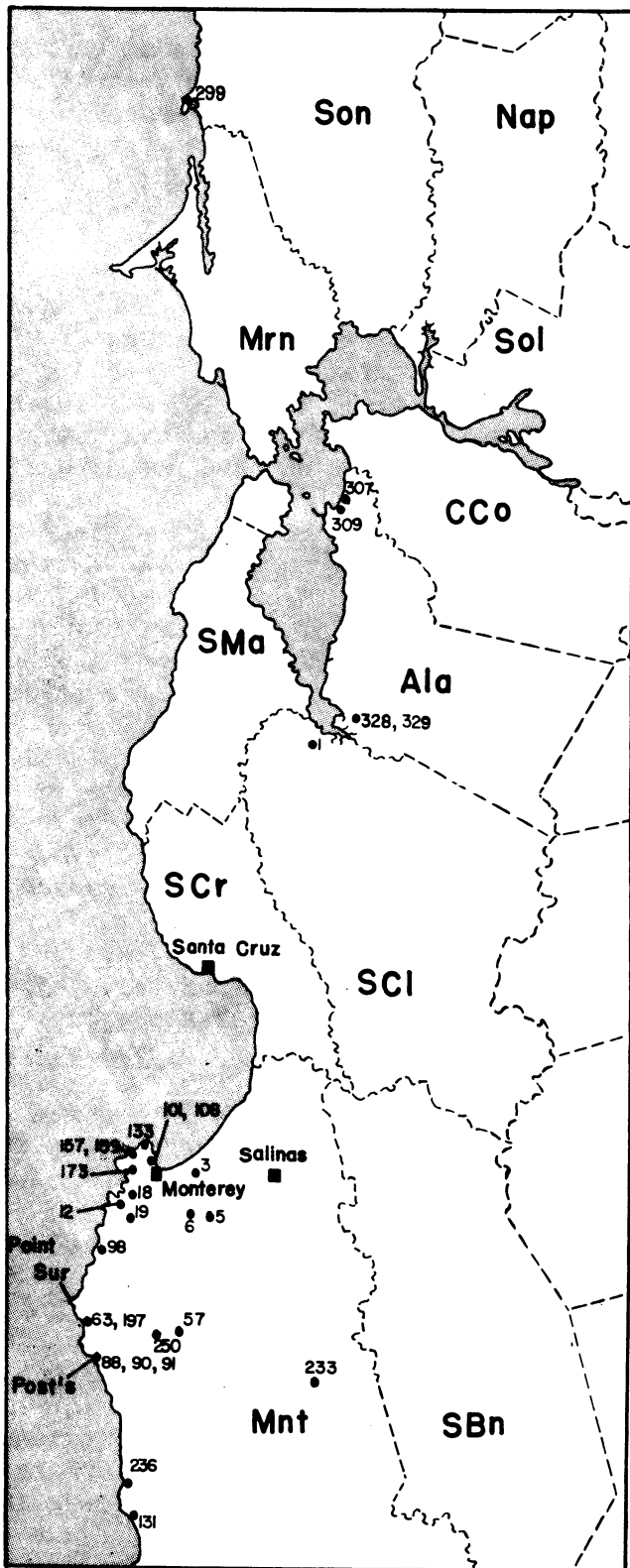
The total effect of the cultural influence of the Santa Barbara area upon the Monterey Coast will not be apparent until extensive and intensive excavation has been conducted in the Monterey region. However, the present state of knowledge concerning Monterey Coast archaeology does point to a heavy influence from this southern focus. In this section of the paper the writer has restricted himself mainly to discussing Monterey traits shared with the Santa Barbara Coast and absent from the San Francisco Bay region. A few Monterey types are compared with traits of the San Joaquin Valley in a later section.

Basin metate. A single metate fragment of sandstone (see Plate 1, e) was recovered from Mnt-197, a coastal site in a consolidated sand dune. The maximum external length of the metate was probably 20 inches; the approximate width was 10 inches; the height, 3 1/2 inches. The basin measured about 10 inches by about 8 inches; the maximum depth could not be reconstructed. Two other fragments of basin metates were recovered in an isolated cache (Mnt-30) during reconnaissance. These granite specimens were noted

Map of Central California Coast
Showing Archaeological Sites

Abbreviations of County Names

Ala	Alameda	SCl	Santa Clara
CCo	Contra Costa	SCr	Santa Cruz
Mnt	Monterey	SLO	San Luis Obispo
Mrn	Marin	SMa	San Mateo
Nap	Napa	Sol	Solano
SBa	Santa Barbara	Son	Sonoma
SBn	San Benito	Ven	Ventura



eroding to the surface in the drip area beneath a small oak on the apex of a knoll; no other indication of aboriginal occupation was recognized in the immediate vicinity. One piece (Plate 1, f and g), about one quarter of a total specimen, has a fragmentary length of 10 inches, width of 9 inches, and is 3 3/4 inches high. The cavity of this metate was 7 by 6 inches with a depth of 1 3/4 inches. The other specimen (see Plate 1, h), about one tenth of a total metate, is 8 1/2 inches in radius and 5 1/2 inches high, with a cavity about 7 inches in radius and 3 1/2 inches deep.

Basin metates are present in the early culture of Topanga Canyon (Treganza and Malamud, 1950, pp. 141-144 and pl. 16) of northern Los Angeles County, Oak Grove (Rogers, 1929, pl. 54) and Hunting (Orr, 1943, pp. 27 and 38) in southern Santa Barbara County, and presumably in strata I and II at Point Sal (Carter, 1941, p. 215) in northern Santa Barbara County. Further north, basin metates have been reported from Los Osos Valley in San Luis Obispo County (Pilling, 1951, p. 199).

Cairn-covered burials. Beardsley (1946, pp. 209-210) reported the covering of part of a burial (Burial 2) by a rock cairn at the excavation of Mnt-108. Dr. R. F. Heizer informed the writer that recent excavations at Mnt-281 and -282, on the coast of southern Monterey County, have also produced the same trait. Cairn-covered burials appear to be a Santa Barbara trait (Rogers, 1929, opp. p. 342; Orr, 1943, p.24). Excavation at Jalama, SBa-205, showed cairn burials as present at the western limit of the Channel Coast. Ruth (ms.) reported cairn burials from the Lompoc and upper Santa Ynez Valley regions. (6) Cairn-covered burials have not been reported in the San Francisco Bay region. Their absence in this area of heavy archaeological activity leads one to consider that the trait is absent or very rare.

Earth-bound mortars (7). Earth-bound mortars occur at about 25% of the sites known in northwestern Monterey County. They occur at about 75% of the sites where rock is available. The Monterey earth-bound mortars have a rounded-apex, inverted-cone shape (see Plate 1, 1), and contain few holes per rock; ten is, in general, a maximum (Mnt-98) although one case of 40 (Mnt-6) is known. Many rocks have only one or two holes. This is in sharp contrast to the Southern Sierra earth-bound mortars where over 100 holes are often found together on a single rock.

Reports available on earth-bound mortars of the Santa Barbara region indicate that they have few holes (Rogers, 1929, p. 390). In the intervening regions of the Los Osos Valley, San Luis Obispo County, and Jolon, Monterey County, the Santa Barbara-Monterey type of earth-bound mortars is known at SLO-5, SLO-11, SLO-12, SLO-25, Mnt-237, Mnt-260, Mnt-274, Mnt-275, and Mnt-276. Earth-bound mortars are known also to the north of Monterey, in scattered occurrences up to the Carquinez Straits. Earth-bound mortars occurring north of San Francisco Bay are not common. In that area at least some earth-bound mortars lack the rounded-cone cavity. The earth-bound mortars of the east shore of San Francisco Bay possibly are related to those of the Monterey and Santa Barbara regions.

Ceremonial bowls. A single ceremonial bowl has been recovered from the Post's on the Monterey Coast, probably at the site Mnt-88. (8) This bowl is finished to an exterior shape of an inverted, truncated cone. The interior shape is conical. The bowl is 7 1/2 inches high with an external diameter of 9 3/4 inches at the top. The rim is flat and ungrooved (see Plate 1, i). This type is comparable to the most common Santa Barbara form, but lacks the usual groove on the horizontal rim (see Plate 1, j). Mr. Orr's (ms.) useful classification of ceremonial bowl types designates the flat-rimmed, flaring bowl as "Mescalitan Island Type". The grooved-rimmed type is termed "Las Llagas". The Monterey Coast ceremonial bowl is of the Mescalitan Island type. Recently an aberrant Mescalitan Island type was found in the San Luis Obispo region (SLO-125). The Las Llagas type is known in this last area at SLO-56 on San Luis Bay. The conical interior and flaring form of the Post specimen is in contrast to the shapes of the San Francisco Bay and Marin County types of ceremonial bowls (see Plate 1, k).

Hopper mortars. The hopper mortar is a common portable mortar type in the Monterey region. This mortar is properly classed with the Santa Barbara region portable mortars on the basis of its large, shallow, saucer-shaped concavity (see Rogers, 1929, opp. p. 357). The Monterey hopper mortars are of two forms: an unshaped, flattish boulder with the concavity in one surface; and a shaped, semi-cylindrical stone mass with a concavity in one end. (9) The former form is pictured for the Santa Barbara region on Plate 58 of Rogers (1929). Hopper mortars made in unshaped boulders were recovered in excavation at SBA-485 on the Santa Ynez River and in the survey of areas adjacent to Mnt-281. For a Monterey example of the shaped, semi-cylindrical hopper mortar see Plate 1, m. This type is common from sites adjacent to SLO-5 (Spooner Collection, San Luis Obispo).

Use of asphaltum. Asphaltum was extensively used by the aboriginal peoples of the southern San Joaquin and Santa Barbara regions. In these areas asphaltum is an easily available raw material (Heizer and Treganza, 1944, p. 319). The nearest reported source to the Monterey region is an offshore seep at the southern end of Morro Bay, San Luis Obispo County (10); other sources approximately as near are known in the San Joaquin Valley. However, the importance of inland seeps as a source of asphaltum for coastal peoples can be over emphasized. Asphaltum from ocean bottom seeps, which are present from the region of Orange County to Morro Bay, may have floated north on the coastal currents to provide Monterey peoples with asphaltum mastic, or natural tar from unknown offshore seeps nearer to Monterey may have floated on to Monterey Coast beaches. Regardless of its source, the presence of asphaltum on about 5% of artifacts (11) (specifically, hopper mortars and projectile points) in the Monterey region is significantly higher than its presence on artifacts in the San Francisco Bay area.

Abalone dish. An abalone dish (Haliotis cracherodii) was recovered from an inland site, Mnt-250, about 20 miles east of Post's. The dish lacks asphaltum plugs, but has been used as a container for asphaltum; the smears left by a brush used for asphaltum are still present in the

bottom of the shell. The use of an abalone shell for a container or dish for asphaltum is an archaeological trait at Santa Barbara (Gifford, 1947, p. 7; Rogers, 1929, p. 396; Baumhoff, 1951, pp. 5-6; Orr, 1943, p.33). Abalone dishes or containers are not present at the more northern sites on San Francisco Bay. Abalone shells are known at San Francisco Bay and Marin Coast sites, such as Son-299 and Ala-307, but none have been used as containers or dishes.

Shell fishhooks. Two fragments of worked mussel shell found at Mnt-12, by Packerthal, appear to be segments of Santa Barbara shell fishhooks (see Plate 1, a). The identification of these pieces as shell fishhooks was made first by Beardsley and Wallace; the present writer, upon examination of the specimens, concurred. This identification is considered to have been validated by the recent discovery of whole shell fishhooks at Mnt-281 and -282 (Heizer, 1952, p. 12, f. 25).

Shell fishhooks are known from historic Luiseño (Druckar, 1937, pp. 7 and 47; Sparkman, 1908, p. 200), the whole coastal stretch of the Santa Barbara Channel (Heizer, 1949a, p. 89), and the site SBA-205 at Jalama. They are not reported from the region between Jalama and Mnt-282.

Punctate bone decoration. Gifford illustrates several punctate bone pieces in his Bone Artifacts. (12) These and similar specimens pictured by Heye (1921, pl. LVII and LXX) are from the Santa Barbara region. A single piece with punctated design is known from the site Mnt-131, about 20 miles south of Post's (see Plate 1, b). This bone specimen is the only one of the 17 pieces noted during reconnaissance which may not have had a utilitarian function; all other pieces are either awls, abalone pries, or rib-scrapers. The sole example of punctated bone design from the San Francisco Bay area (Ala-328: Davis, ms. 1954, p. 56) was apparently made by punching holes into the surface--a non-Santa Barbara type of decoration.

Abalone pries. A further artifact type shared between Santa Barbara Channel sites and Monterey Coast sites is a long, thin wedge of sea mammal bone, apparently whalebone. The seven examples from the Monterey Peninsula (one each from Mnt-3, Mnt-133, and Mnt-157, and four from a cache at Mnt-159) vary in length from 9 to 15 inches; their width is about two inches; their thickness tapers from about 3/4 of an inch in the butt four-fifths to a straight chisel edge at the front (see Fig. 2, a). Other bone wedges of this type are pictured by Heye (1921, pls. XLVII, XLVIII, and XLIX) for San Miguel Island and by Meighan and Eberhart (1953, fig. 40 and p. 122) for San Nicolas Island. The University of California's collections from Santa Rosa, San Clemente, and San Nicolas islands on the Santa Barbara Channel also include them.

Gifford (1940) reported long, thin whalebone wedges from the Channel Islands. At the Museum of Anthropology, Berkeley, the writer compared the pieces considered by Gifford with Monterey wedges. Gifford's classification appeared to break down. Gifford (1940) put long whalebone wedges in type D7 of his bone artifact classification. Gifford lists in manuscript

(ms. 1937) the catalogue numbers of all specimens in each of his types. Bone wedges resembling those at Monterey are listed not only in type D7, but also in types D2 and D6.

Gifford (1940, p. 171) says concerning the function of type D7: "Bar for prizing off abalones: ...Use hypothetical; based on such use of similar wooden objects by Coast Yuki of Mendocino Co. Also possible that some of the curved ones were used as boomerangs [throwing sticks], because they suggest wooden prototypes in use by S California Indians. Bone probably more abundant than wood on SC [Southern Coast] islands." Elsewhere Gifford (1939, p. 327) describes the Coast Yuki abalone pry and its use. These were one foot long, of rhododendron or mahogany, with a square distal end. A cobble was employed in driving this pry.

The writer believes that Gifford accurately suggested the function of these long wedges. Some of the Monterey specimens show the splintering on the butt which would be expected if they had been driven with cobbles as were the Coast Yuki abalone pries.

The shape of the abalone pry apparently is determined largely by the habits of the abalone. Maximum efficiency and safety for the collector are present only in the long, thin wedge. The most efficient modern abalone pries are made of either a "leaf" of a leaf spring or of an iron for removing tires from wheels. Both modern pries are of the same form as the prehistoric whalebone pry and the Coast Yuki wooden pry.

Gifford suggests that bone was used as a substitute for wood due to the limited supply of this material on the Channel Islands. On the well-timbered Monterey Peninsula this suggestion is unwarranted. Although the abalone pry may have been an implement known along the whole coast of California, its manufacture of whalebone in an area where suitable wood is available indicates an introduction of the artifact type from outside.

Stemmed projectile points. Many projectile points from the Monterey area have an inslanting or incurving stem with a rounded butt (see Fig. 1, a-j). Specimens are known from sites Mnt-5, Mnt-12, Mnt-18, Mnt-57, Mnt-90, Mnt-101, Mnt-108, Mnt-173, and uncertain localities in the Point Pinos Reserve and near Point Sur. Mnt-18 (Carmel Mission) is an historic site, probably without any proto-historic or prehistoric occupation. The occurrence of the stemmed projectile point at this site proves that this point type lasted into the historic period in the Monterey region.

Stemmed forms of this type are rare in the San Francisco Bay and Marin County areas (Beardsley, 1954, p. 9: type S3), but occur commonly to the east of the Monterey region in the upper Santa Clara drainage of San Benito County (Pilling and others, ms.; UCAS, ms. b), and in the Sacramento Delta (Heizer, 1949b, figs. 12, 13, and 11: type SAa). This type is common on the Santa Barbara Channel (Heye, 1921, pl. XXXVIII). Rogers (1929, pl. 59) designated it as a Hunting trait. At Point Sal Carter (1941, pp. 215 and 224) found the type in Strata II and III. The occurrence of this projectile point type at Monterey may be given several

interpretations: 1) This type is part of an early culture tradition represented outside of the Monterey region by Early Horizon Central California and Santa Barbara Hunting. 2) This projectile point type spread from a more northern center south to Monterey, the San Joaquin Valley (Wedel, 1941, p. 64; Gifford and Schenck, 1926, p. 82), and Santa Barbara. 3) This type of projectile point reflects a basic form of hafting which may be often duplicated without historical connection. The Delta, Monterey Coast, San Benito County, San Joaquin Valley, and Santa Barbara occurrences are of several origins. 4) There is no direct historical connection between the Santa Barbara and Delta occurrences, and the Monterey occurrence is the result of the trait spreading southward from the Delta to the San Joaquin and then westward to Monterey. 5) There is no direct historical connection between the Santa Barbara and Delta occurrences, but the Monterey occurrence derives from the south. The correct interpretation cannot be established as yet.

Painted petroglyphs. Steward (1929, pp. 96-109) considered the petroglyphs of Monterey and Santa Barbara as a single unit. About 25 painted petroglyph sites have been discovered recently in the interior area of Monterey County, near Mnt-250. These petroglyphs parallel in many details those of the Santa Barbara region. The detailed study (Pilling, ms. 1948a) necessary to show this parallelism has not been published. Painted petroglyphs are unknown between the upper Carmel Valley and Clear Lake, Lake County. At Clear Lake the style is different.

Summary. Many traits noted during the archaeological reconnaissance of coastal Monterey County occur also on the Santa Barbara Channel. These items include the basin metate, cairn-covered burials, earth-bound mortars, the Mescalitan Island type ceremonial bowl, the hopper mortar, the extensive use of asphaltum, abalone dishes, shell fishhooks, punctate bone decoration, abalone pries, a specific type of stemmed projectile point, and painted petroglyph motifs. The occurrence of the basin metate in the Monterey County region suggests considerable antiquity; this parallels its known dating at Santa Barbara. The Monterey traits which have been listed do not occur to the north of Monterey in the San Francisco Bay region. They indicate the southern orientation of the aboriginal cultures of Monterey County.

Monterey Traits Shared with the San Joaquin Valley

The diagnostic artifacts which were recovered during survey were, aside from Santa Barbara traits, either European (and Mexican) or types shared with the San Joaquin Valley. Traits shared with the San Francisco Bay region are generalized or non-characteristic, such as abalone ornaments, bone awls, pestles, and mortars; while several of those shared with the San Joaquin Valley were specific.

The traits which are discussed below are known in both the San Joaquin Valley and the Monterey Peninsula. These types are of a late date

FIGURE I
Artifacts from Monterey County

- (a) Outline of green flint projectile point from Mnt-90. Robson Collection.
- (b) Outline of Monterey shale projectile point from Mnt-57. L. S. Calhun Collection.
- (c) Outline of brown and white chert projectile point from Mnt-18. Harry Downie-Mission Collection.
- (d) Outline of green chert projectile point from Mnt-18.
- (e) Outline of grey flint projectile point from Mnt-101. Hatched areas on stem indicate areas showing traces of asphaltum. James Martin Collection.
- (f) Outline of yellow flint projectile point from Mnt-173. Fackenthal Collection.
- (g) Outline of projectile point of black and white flint from the Point Pinos region. Fackenthal Collection.
- (h) Outline of projectile point of tan-speckled brown flint from the Point Pinos region. Fackenthal Collection.
- (i) Outline of projectile point of red chert from Mnt-12. Fackenthal Collection.
- (j) Outline of Monterey shale projectile point from Mnt-5.
- (k) Outline of grey flint hafted scraper from Mnt-18. James Martin Collection.
- (l) Outline of hafted scraper of blue and white porcelain from Mnt-18. James Martin Collection.

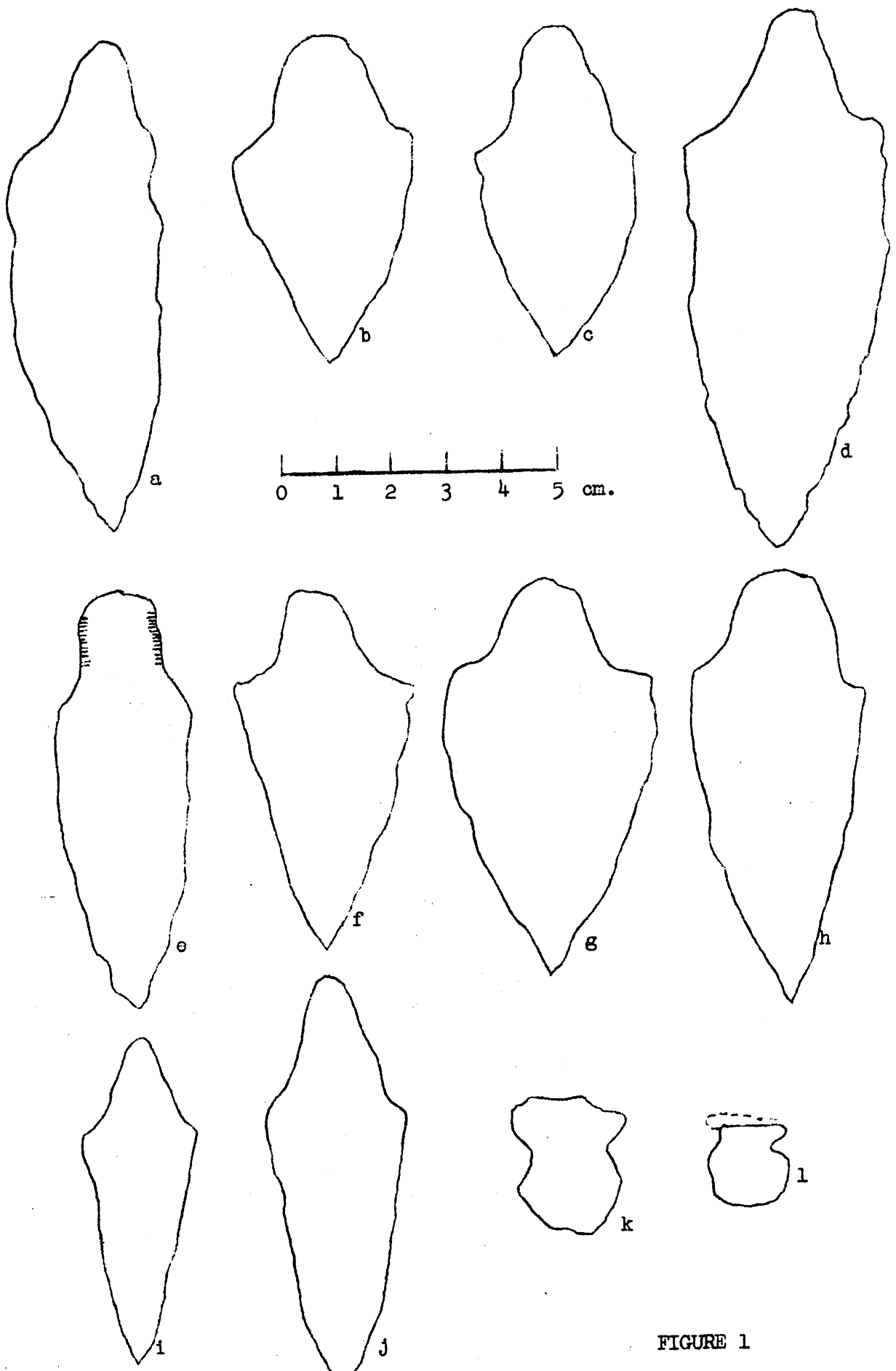


FIGURE 1

in the Valley, and their occurrence in the Monterey region may result from the visits of Yokuts and Plains Miwok to the coast in the historic, and possibly the proto-historic, period. The travel of small bands of historic groups to the shore near Monterey to obtain abalone shell and salt has been discussed recently by Treganza (1952, p. 22) for the Plains Miwok, and by the present writer (Pilling, 1950, p. 438) for the Yokuts. Possibly all specific archaeological traits which are shared between the San Joaquin Valley and the Monterey Peninsula are reflections of this historic pattern.

Side-notched, triangular arrow points. Three sites on the Monterey Coast have produced small, side-notched, concave-based projectile points. Two occurrences are clearly historic; the date of the third cannot be accurately established. Prior to Broadbent's excavation eight of these points (see Fig. 2, b-1) were known from the historic Mnt-18, the Carmel Mission. Five were of a tan or beeswax-colored flint; one, of grey flint; one, of bottle glass; and one, of blue and white porcelain. A tan flint specimen (see Fig. 2, i) has an area of asphaltum at its concave base, indicating the use of adhesive in hafting. A fragmentary piece of window glass (see Fig. 2, n) from Mnt-18 likewise may be of the type mentioned above. A single point of the described outline and flaked from a sherd of white porcelain decorated in black (see Fig. 2, m) comes from an unidentified site between ten and twenty miles south of Carmel. The third and undated occurrence of the small, side-notched, concave-based projectile point is at Mnt-157, where Fackenthal recovered three specimens of flint (see Fig. 2, j-1). The occurrence of similar stone heads on two of the arrows collected by Hewett (13) at Monterey in the early 1790's suggests that this type may not have been an historic introduction.

Two specimens from historic Mnt-18 (see Fig. 1, k and l) are not arrowheads, but have the same expanding stem and side-notches. They were probably hafted scrapers, for they have blunt points possibly too curved to penetrate deeply into flesh. The date of this type is also probably solely historic.

To the south of Post's, the concave-based, side-notched arrowhead has not been reported; it is likewise absent from the San Francisco Bay region. Several chert specimens have been recovered from historic Mnt-233, the Soledad Mission, but otherwise the nearest known occurrences are from the San Joaquin Valley. Wedel (1941, pl. 39) reports this type from the Buena Vista Lake region. Somewhat further north Gifford and Schenck (1926, p. 84) may have encountered the same type. In the Stockton-Lodi region 66.6% of all "arrow" points recovered are of this type (Schenck and Dawson, 1929, p. 380 and pl. 91). The high percentage of the type in the Stockton-Lodi region shows an interesting correlation with data concerning the place of origin of groups visiting Monterey: one from the Merced River of Merced County (Pilling, 1950, p. 438), and one from the Farmington region of San Joaquin and Stanislaus Counties (Treganza, 1952, p. 22)--both from the Sierra foothills adjacent to Stockton and Lodi.

Incised clam shell beads. Two clam shell beads in the Fackenthal Collection were recovered on the Monterey Peninsula (see Plate 1, c and d). Their edges bear the fine incised decorations most characteristic of the San Joaquin Valley. One, 9/16 inches in diameter, has three hatched X's on its edge; the other, 5/8 inches in diameter, bears two hatched X's and two blocks of parallel lines arranged alternately between a border of vertical lines.

Similar specimens are known from the most recent period in the San Joaquin Valley. Wedel (1941, p. 50 and pl. 27, n) reports a single specimen from a level less than a foot deep in his Site 1, which is known to range into the historic period. Notes on the D. M. Witt Collection (Pilling, ms. 1948b) show similar specimens from a site near Corcoran, Kings County, of late and possibly historic date. (14) F. Riddell (1951, fig. 1) gives us considerable information concerning incised beads from Ker-74, near Delano, an historic site lasting into the post-1850 period. Gifford and Schenck (1926, p. 58 and pls. 14, I and 15) mention specimens from the southern San Joaquin Valley, but they give no information concerning the context of discovery. Schenck and Dawson (1929) lack notes on the presence of this trait in the northern San Joaquin Valley, while a cruder type of incised edge clam shell disc bead is reported by Heye (1921, pl. CXVI) from San Miguel Island. The latter occurrence suggests that this San Joaquin Valley trait may have derived from the Santa Barbara region, possibly in historic times. In the San Joaquin Valley edge incising of clam shells became a more skillful art. The specimens found on the Monterey Peninsula probably came from the San Joaquin Valley.

Unglazed ceramics. Three occurrences of unglazed pottery on the Monterey Peninsula are of disputable origin. Unfortunately, specimens from two of the sites are not available to the writer at the present time; thus, detailed description is impossible. However, the presence of unglazed pottery at Monterey Peninsula sites is noteworthy.

Fackenthal recovered several unglazed, earthenware sherds from a site, which has since been covered by sand dunes, near Point Pinos, the northern point of the Monterey Peninsula. Golomshtok (ms. 1921-1922) recovered another lot on the surface of Mnt-159. The manufacture of this earthenware by Yokuts and Western Mono (15) has been suggested in an earlier paper (Pilling, 1950, pp. 439-440). Extensive excavation at Carmel Mission by Harry Downie and more recently by Sylvia Broadbent have established the probability of the local manufacture of unglazed earthenware at that site. Miss Broadbent's analysis (ms. 1955) indicated that the unglazed earthenware from Mnt-18 is distinguishable from the historic pottery of the Yokuts on the basis of vessel form.

These occurrences reflect either the manufacture of unglazed ceramics at the Carmel Mission or reflect both that manufacture and the utilization of sites on the Monterey Peninsula by the pottery-making Yokuts, Western Mono, and Northern Paiute. In either event the presence of unglazed pottery on the Monterey Peninsula must be interpreted as a late proto-historic or historic trait.

FIGURE II
Artifacts from Monterey County

- (a) Top view and cross-section of abalone pry from Mnt-3. Robson Collection.
- (b) Reconstructed outline of tan flint arrowhead from Mnt-18. James Martin Collection.
- (c) Outline of tan and white flint arrowhead from Mnt-18. James Martin Collection.
- (d) Reconstructed outline of grey chert arrowhead from Mnt-18. James Martin Collection.
- (e) Outline of arrowhead of bottle glass from Mnt-18. James Martin Collection.
- (f) Reconstructed outline of arrowhead of blue and white porcelain from Mnt-18. James Martin Collection.
- (g) Outline of arrowhead of beeswax flint from Mnt-18. Harry Downie-Carmel Mission Collection.
- (h) Reconstructed outline of arrowhead of beeswax flint from Mnt-18. Harry Downie-Carmel Mission Collection.
- (i) Reconstructed outline of tan flint arrowhead from Mnt-18. Hatched area of base indicates presence of asphaltum. James Martin Collection.
- (j-1) Outlines of arrowheads from Mnt-157. Fackenthal Collection.
- (m) Outline of arrowhead of glazed ceramics from site on bluff above ocean south of Carmel, pattern in black on white background. Fackenthal Collection. Outline taken from sketch in Beardsley's notes in Pilling and Beardsley, ms.
- (n) Outline of arrowhead of window glass from Mnt-18. James Martin Collection.

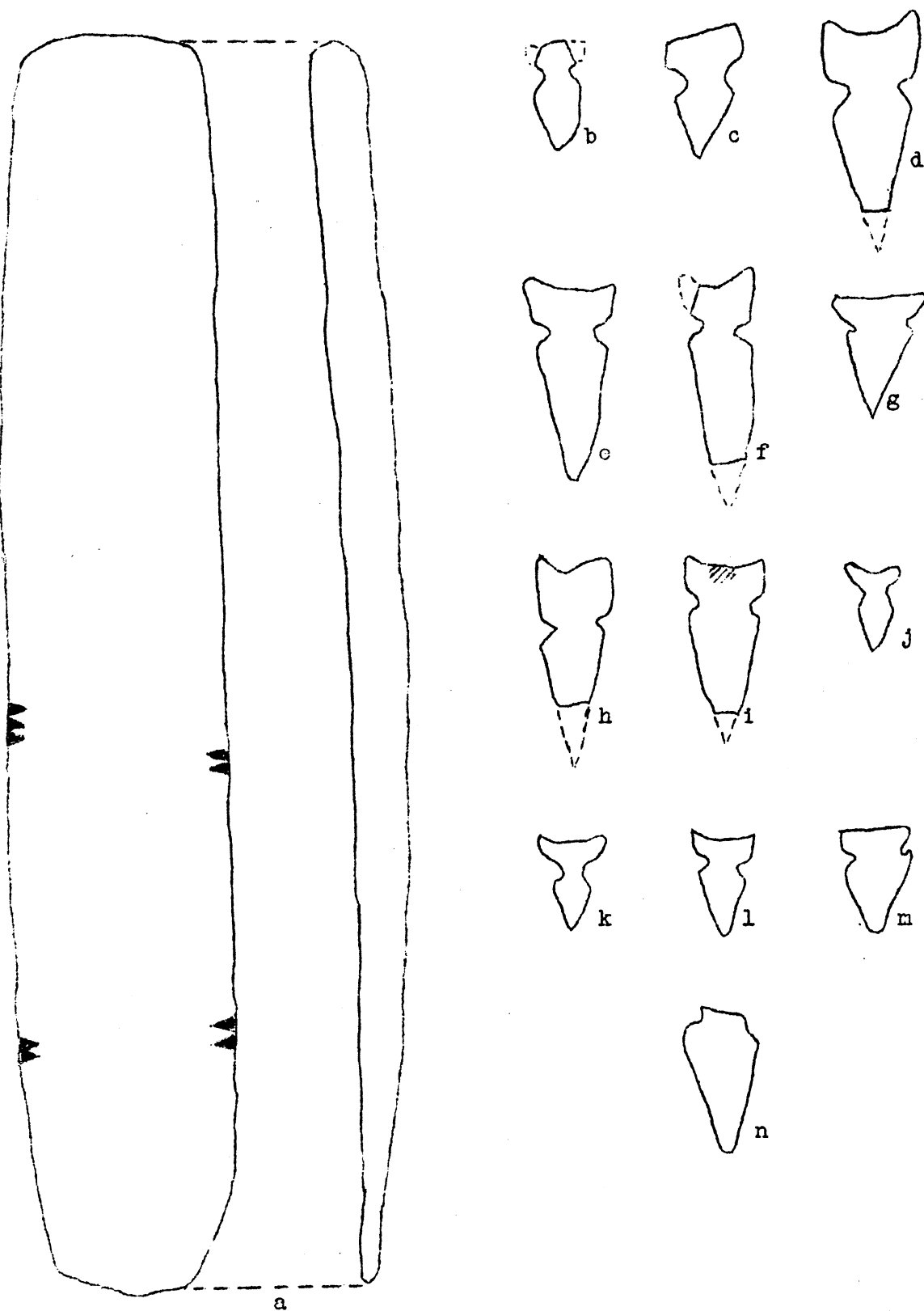
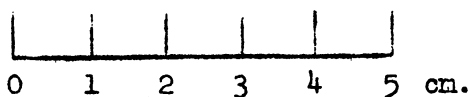


FIGURE 2



Conclusions

The large number of archaeological traits shared by the Monterey and Santa Barbara regions suggests that the outside cultural ties of the Monterey region lie primarily to the south toward the Santa Barbara Channel, not to the north. The southern limit of known Central California culture sites is about 20 miles northwest of San Jose at SCl-1 and northeast at Ala-328 and Ala-329. (16) The gap between Monterey and these latter sites is only about 90 miles. A major transitional area between the Santa Barbara and San Francisco culture types should be found between Monterey and the southern end of the San Francisco Bay; this zone probably lies in the lower and middle Santa Clara Valley.

No accurate statement can be made now concerning the Monterey sequence, for excavation has been limited and surface yield low. Indications that the Santa Barbara sequence may apply further north have been noted. One site, Mnt-197, produced metates from a consolidated sand dune, a possible indication of an early culture similar to Oak Grove. Another site, Mnt-18 (Carmel Mission), has yielded small projectile points. Similar concave-based, side-notched stone tips were present on arrows collected by Hewett at Monterey. These occurrences act only as a suggestion of a possible parallel to the general Santa Barbara culture sequence in the Monterey region. Detailed excavation at Mnt-3, Mnt-12, Mnt-63, Mnt-88, Mnt-101, and Mnt-157 should help clarify the outside ties of the cultures on the Monterey Coast.

However, most tentatively, a resumé of the history of the Monterey Coast may be suggested. An early people lived on coastal dunes at Mnt-197, used basin metates, and subsisted by some hunting and considerable gathering of vegetable products, but little if any gathering of shellfish. A subsequent diffusion of traits including the cairn-covered burial, the hopper mortar, the earth-bound mortar, the ceremonial bowl, the shell fishhook, and the whalebone abalone pry, from the Santa Barbara focus, caused alterations in Monterey Coast cultures. Occasional occupation of sand dunes continued, but settlements were more commonly away from sand blown areas and were on the banks of creeks within easy walking distance of the rocky points which produced abalone and mussel shellfish. The culture changed considerably during this long period. Single new southern traits were added from time to time without causing the sudden change characteristic of migration. Finally, possibly solely within the historic period, Yokuts and Plains Miwok people of the San Joaquin Valley introduced a few new traits such as stone-tipped arrows. Some of these annual visitors permanently joined the neophytes at Carmel Mission, while others, apparently unmolested by the Spanish and Mexican residents of the Coast, made their camps on the sand dunes, collected salt and abalone shell for ornament manufacture, and departed for the Valley and Sierra Foothills.

NOTES

- (1) The investigation considered in this paper was aided by research funds from the University of California, Department of Anthropology, to cover four weeks site survey during the summer of 1948. A similar period in 1947 and week-end trips from 1947 into 1950 produced other artifacts and allowed notes to be made on local collections. The notes are now deposited with the University of California Archaeological Survey (UCAS). The artifacts are at the Museum of Anthropology of the University of California (UCMA). Special gratitude is due the local collectors of the Monterey Coast and several property owners: Mr. Ernest Fackenthal of Robles Del Rio, Mr. Bruce Church of Salinas, Mr. Francis Johnson of Salinas, the late Joseph Post of Big Sur, Mr. E. B. Robson of Carmel, Mr. James Martin of Monterey, Mr. William Martin of the Carmel Valley, the late Dr. Walter Fisher and his widow Anne Fisher of Pacific Grove, Miss Fanny Molera of San Francisco, the late Edward Doud of Monterey, Mr. Harry Downie of Carmel, Mr. William Colby of the Sierra Club, San Francisco, and Mr. L. S. Calhoun of the Carmel Valley. Further, the writer would like to express his gratitude for constructive criticism of this paper to Dr. R. F. Heizer, Mr. James Bennyhoff, Miss Cherie Gregoire, and Miss Sylvia Broadbent, all of the Department of Anthropology, University of California at Berkeley, and Dr. C. W. Meighan, of the Department of Anthropology and Sociology, University of California at Los Angeles.
- (2) Beardsley and Wallace's notes on the Fackenthal Collection (in Pilling and Beardsley, ms.) made in 1946 are especially worthwhile, for they were taken before the destruction of the catalogue system used in recording the original collection. By the time the writer viewed the collection, the catalogue was gone.
- (3) The site numbers used in this paper will be those of the University of California Archaeological Survey. See Heizer, 1948, p. 7.
- (4) These excavations were briefly discussed by Beardsley, 1946, pp. 209-210. No intensive study of this small sample was attempted by Beardsley.
- (5) The excavation of SBA-205, at Jalama, 50 miles west of Santa Barbara, was under the direction of Dr. Norman Gabel of the University of California, Santa Barbara College, assisted by Mr. Donald Lathrap then of the University of California Archaeological Survey. Excavation in the Cachuma Reservoir, in the Santa Ynez Valley, was conducted by Martin Baumhoff (1951) and Albert Mohr for the Smithsonian Institution.
- (6) The Ruth manuscript mentions excavations in the upper Santa Ynez. Mrs. Ruth in personal conversation with the writer during February, 1949, discussed details of the occurrence of cairn-burials near Lompoc.

- (7) This term, suggested by F. F. Latta in conversation with the writer in June, 1950, is used because of its greater accuracy. D. B. Rogers, 1929, p. 390, also used the term "earth-bound mortar". The more common term "bedrock mortar" is usually a misnomer, for most commonly these mortars, made in a non-portable rock, are in float rock, not bedrock. They are anchored in the earth, not part of a great single mass of stone.
- (8) The Joseph Post Collection, at Big Sur.
- (9) The first mentioned type is known from Mnt-157 (UCMA), Mnt-236 (Robson Collection), Mnt-5 (ranch house collection), and Mnt-19 (UCMA). The second type is represented by three specimens at Mnt-91 (Colby Collection).
- (10) Mr. Carl Spooner of San Luis Obispo mentioned to the writer in August, 1947, that about 1900 he and other members of his family occasionally rowed to a point in the ocean about one-fourth mile offshore where they collected raw asphaltum. The natural tar, which was used unrefined on the ranch, bubbled to the surface of the ocean a few miles south of Morro Bay.
- (11) This figure is based on the occurrence of asphaltum on the artifacts from the Monterey Coast in the Robson Collection. The total sample included over 250 specimens.
- (12) Gifford, 1940, types L1, Q5, Q6, Q7, Q8, QQ2b, as contrasted to a single specimen from Ala-309 of type N5. See also Orr, 1947, types N66, P2c, P10b, Q11, EE2c, EE2g, and UU8.
- (13) British Museum, 1891. Van 17 is the catalogue number of the arrows collected by Mr. Hewett at Monterey in the 1790's.
- (14) Aside from incised edge clam shell disc beads, this site near Corcoran produced incised *Haliotis* rim pendants (see Gifford, 1947, p. 107, AP4bIII, second from left of illustrated specimens of type), a stemmed ring type *Haliotis* ornament (see Gifford, 1947, p. 72, J7aI, extreme right illustrated specimen of type), an incised tubular clam shell bead, a spirally marked columella (see Gifford, 1947, p. 111, AU2), a smooth tubular clam shell bead, a butterfly-shaped chipped stone piece, a whorl-shaped baked clay object, and a small, triangular, concave-based, side-notched, obsidian projectile point. The above traits are all considered to be late in the Corcoran area; however, only a few types are identifiably late. The smooth tubular clam shell beads are late on the Santa Barbara Channel (Rogers, 1929, p. 71). In the Delta they are present at Sac-6 in the only historic region of the site dug previous to 1934, and at Sac-127 they were on Burial 9, Cemetery 1, and Burial 8, Cemetery 2, associated in both cases with strung clam shell disc beads and in the former case with a small, triangular, concave-based, side-notched point (Heizer, ms. 1934; Lillard, ms. 1934).

- (15) Recent material concerning the late prehistoric occurrence of pottery among the Yokuts, Western Mono, and Northern Paiute has been presented by H. Riddell (1951, fig. 1) and Fenenga (1952, pp. 343-344). An ethnographic account of the manufacture of pottery by Yokuts and Western Mono has been written by Gayton (1929).
- (16) Recent excavation at SC1-1 has been under the direction of Warren Caldwell (ms. 1949), formerly a student at Stanford University. Recent work at Ala-328 and Ala-329 has been done by Dr. Adan Treganza and his students from San Francisco State College, augmented at times by students from the University of California, at Berkeley. This excavation has been summarized by J. Davis (ms. 1954).

(A distinction is made in this paper between "flint" and "chert." The term "flint" has been used for translucent silica; "chert" for opaque silica. -- ARP)

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PLATE I
Artifacts from Coastal California

- (a) Reconstructed outline of mussel shell fishhook from Mnt-12. Fackenthal Collection.
- (b) Illustration of punctate bone fragment from Mnt-131. UCMA 1-73100. Blackened corner shows a reduced carbonation of the bone.
- (c-d) Side and top view of incised edge clam shell disc beads from the Monterey Peninsula. Fackenthal Collection.
- (e) Cross-section of fragment of metate from Mnt-197. UCMA 1-84532.
- (f-g) Cross-section of metate fragment from cache Mnt-30. UCMA 1-81645.
- (h) Cross-section of metate fragment from cache Mnt-30. UCMA 1-81644.
- (i) Cross-section of ceremonial bowl from Post's, probably Mnt-88. Post Collection.
- (j) Cross-section of Orr's "Las Llagas" type ceremonial bowl. The specimen used as the basis for this diagram is from SLO-2. Spooner Collection.
- (k) Cross-section of Marin County type of ceremonial bowl. After Beardsley, 1948, Plate I.
- (l) Cross-section of usual type of earth-bound mortar hole on the Monterey Coast.
- (m) Cross-section of semi-cylindrical hopper mortar from Mnt-91. Black around top of saucer-cavity indicates asphaltum covered area. Colby Collection.

