TRADE ROUTES AND ECONOMIC EXCHANGE AMONG THE INDIANS OF CALIFORNIA

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ABSTRACT

Information referring to trade and trails in native California has been abstracted from ethnographic works and other sources which contain specific reference to the subject. Trail routes are plotted and numbered, for bibliographic reference, on one map, and another map indicates, schematically, the California groups who had occasion to use the trails. Each group thus mentioned is listed, together with itemizations of goods imported and exported.

The relative importance of traded material, based upon a count of the number of times each commodity is mentioned in the literature, is suggested by a table with the items arranged in descending order of frequency of mention.

The work is intended as a replacement and supplement to an earlier presentation (Sample, 1950), now out of print, on the same subject. (Ed.)

The related subjects of inter- and intra-tribal trade and the routes followed in traveling from one place to another in aboriginal California are ones which have been largely neglected by ethnographers. The lack of coverage of these topics possibly reflects a series of conscious or unconscious assumptions on the part of both informants and ethnographers. For example, it would not be unreasonable to suppose that if one San Francisco-informed another that he was going to Oakland, both parties would probably assume that the route followed would be over the San Francisco-Oakland Bay Bridge. Similarly, an Achomawi informant, for example, might offer the information that "we go to Glass Mountain to get obsidian," and unless further information is elicited by the interrogator as to the route traversed in getting there, such intelligence probably would not be volunteered because the Indian, possibly unconsciously, assumes that anyone knows how to get to Glass Mountain from a given starting point.

In spite of the lack of specific detailed coverage of these topics in all but a few ethnographic works, such as Steward's (1933) monograph on the Owens Valley Paiute, a considerable body of data may be extracted, piecemeal, from the literature. The first attempt to assemble data on the subjects of trade and trails in California appeared in 1950 in the University of California Archaeological Survey Report No. 8. The present work is offered as a replacement and supplement to its predecessor which has been out of print for a number of years.
Obviously in a research project of this magnitude several sources of information are bound to be overlooked and omissions of data are apt to occur. However, a check of the bibliography will reveal to the reader that a considerable body of literature has been utilized in this study. In all, the principal omissions in the present work have very likely been made in the area of historical sources rather than ethnographic ones. Such omissions must be considered, in a way, as deliberate and are based upon the conviction of the writer that the time involved in searching the huge volume of literature on the early history of California would not be considered well spent when balanced against the relatively small amount of information which may be gained therefrom. Frequencies of imports and exports of various items, as presented in Table I, might be altered somewhat by additional (historical) information, but in the total picture of trade in aboriginal California alterations or adjustments based on this information probably would appear to be of only small significance.

For many years archaeologists have been aware of the distances, sometimes very great, over which preferred artifacts and materials have spread from one group to another. Such diffusion is well documented in the southwestern United States: see, for example, Ball (1941); Bennyhoff and Heizer (1958); Brand (1935, 1937, 1938); Chard (1950); Colton (1941); Fewkes (1896); Gifford (1949); Heizer (1941, 1946); Heizer and Treganza (1944); Henderson (1930); Hodge (1935); Leechman (1942); Malouf (1940); Rogers (1941); Stearns (1889); Tower (1945); and Woodward (1937). Perhaps the earliest published reference to aboriginal trade in shell products between the inhabitants of the Pacific Coast and the Southwest appears in Barber (1876:68).

Specifically, we may note the following items traded between the Puebloan Southwest and California in aboriginal times, and perhaps between Mexico and California, at least during the Mission period.

Gifford (1947:61-62) found fourteen types of ornaments and beads made from marine shell species restricted in their habitat to the Pacific Coast in various Puebloan sites which ranged in time from Basketmaker II through Pueblo IV. Tower (op. cit., p. 21) notes a similar relationship between the Southwest and California.

Kroeber (1925:934-35) and Gifford and Schenck (1926:104 ff.) note the presence of a Mohave type wooden war club, soft twined bags, and woven cotton cloth of Puebloan type, which accompanied burials (presumably Yokuts) near Buena Vista Lake in California.

Font (Bolton, 1931b:250, 275) attests to the fact that woven cotton blankets imported from the Southwest were known and used by the Chumash Indians on the coast and islands of the Santa Barbara Channel.
Gladwin and Gladwin (1935:204) report that two sherds of Hohokam red-on-buff pottery, dating from the Sedentary Period, were recovered from a Gabrielino site near Redondo Beach, California.

Walker (1945:191, 193) states in reference to a site on the northern outskirts of the city of Los Angeles:

"It was a prehistoric site, history commencing with the arrival of the Spaniards, and no white man's material, such as glass beads, iron, etc., being present.

"Arizona supplies one more or less definite date for the site owing to the discovery . . . of about twenty sherds of Arizona red-on-brown Hohokam pottery. This pottery has been identified . . . as of one vessel made in the seventh, eighth, or ninth century A.D."

For the occurrence of Hohokam and other Arizona pottery among the prehistoric Colorado tribes, see Schroeder (1952:47 ff.).

There is on record the occurrence of grooved stone axes from the Southwest among several California tribes in both archaeological and ethnographic times (Heizer, 1946, passim).

Merriam (1955:88-89) notes the use of tripodal metates among the Luiseño in the historic villages of Rincon and Pauma, which perhaps were derived from Mexico.

Another interesting fact concerning relations between the aboriginal peoples of the Southwest and southern California is that, according to Heizer and Treganza (op. cit., p. 335), the turquoise mines in the Mohave Desert were not worked by California Indians but by Puebloan peoples coming into California in presumably rather large expeditions, who remained for some period of time before returning home.

Apparently the most important trade item entering California from the north was the shell of Dentalium pretiosum, which was traded southward from tribe to tribe from the vicinity of Vancouver Island, especially from deep water beds in Quatsino Sound (Drucker, 1950:273).

Not only were these shells traded southward to numerous California tribes as far south as the Chumash (Gifford, 1947:7), but northward to the Kogmollik and Nunatama Eskimo (Stefansson, 1919:164) and eastward at least as far as the Crow and Assiniboin (Denig, 1930:590).

Aside from establishing generalized trade routes and relations by means of determining the source(s) of imported items, the most fruitful results arising from the study of aboriginal trade has been the establish-
ment of relative or "absolute" cross-chronologies of archaeological culture manifestations are already removed from one another by considerable distance (e.g., Bennyhoff and Heizer, op. cit.; Riddell, 1958:45).

Other opinions have been expressed concerning the possible value and utility of the study of aboriginal trade and trails. For example, it has been proposed that the study of Indian trails may be an important tool in attempting to determine the distribution of aboriginal population (Dodge, 1952:235); however the suggestion received rather strong criticism on various grounds (Broek, 1952), and to my knowledge such a study has not been published.

Hill (1948: 371-72) sees the consideration of trade goods and trading customs as an important aspect in the study of the processes of cultural dynamics.

Several investigators have suggested that the evolution of modern highways and railroads developed in many instances from game trails leading to such resources as salt and water. Primitive populations often utilized these natural resources, and they could be thought to have certainly expanded the game trails to include paths furnishing access to other communities and to other raw materials and food supplies as well. When Europeans settled on the eastern seaboard, there was already established a network of trails connecting many diverse locations which supplied a large number of the needs of the immigrants. However this may be, Roe (1929, passim) attempts to discredit the thesis that many modern routes of land transportation in Canada and the United States evolved from game trails, on the basis that buffalo wander and graze indiscriminately over an extensive area and that when they do move in a herd from one grazing region to another they move in a large disorganized array, rather than filing in such a way as to leave a well-defined trail.

Whatever the ultimate origin of the narrow Indian trails, we can state with assurance that from a number of them were developed military and post roads. These were later the routes followed by toll and public thoroughfares (Hulbert, 1902a:18 ff.; 1902b:143 ff.; Mills, 1914:7; Myer, 1928:735; Crawford, 1953:60 ff.).

A similar development, at least in regard to Indian trails becoming modern routes of European travel, may be noted in California. For example, Kroeber (1959: 299) remarks:

"The Mohave, however, knew about the former residents on Mohave River, for their route to both the San Joaquin Valley and to the coast of southern California and subsequently to the Missions and Spanish settlements had followed Mohave River, as later an emigrant trail, then a horse express and freight route, and finally the Santa Fe Railroad followed it."
Van Dyke (1927:354) also mentions this development. It might be added that most of U.S. Highway 66 and portions of other roads follow the same path.

In addition to the route cited above, numerous other highways in California follow closely the courses of aboriginal footpaths. A listing of the more important of these routes is presented here in the Appendix.

There appears to be good reason for the fact that many Indian trails in California could later become modern highways. For example, Beattie (1925:230) states:

"This region [the Colorado Desert in California] had been inhabited by Indians for generations, and was traversed by well-established trails. When Sonorans and Americans began coming into California, they naturally followed the old paths whenever possible."

Many of the early travelers in California either received directions from Indians or were accompanied by native guides. Examples of this are seen in Anza's 1774 expedition (Bolton, 1930; 1931:216; Beattie, 1933a: 54-55, 61); Portola's 1769-1770 travels (Teggart, 1911:9, 25, 27, 111; Bolton, 1927:89, 151; Priestley, 1937:8; Smith and Teggart, 1909:33); McKee's route from Clear Lake to Humboldt Bay (Gibbs, 1853:124); the establishment of "El Camino Viejo A Los Angeles" (Latta, 1936:3); the "Walla Walla Road" (Heizer, 1942; Maloney, 1945); Fremont's 1844 journey (Fremont, 1845:206, 219, 254, 298); Whipple's route from San Diego to the Colorado River (Whipple, 1951:2, 13); Garces' travels along the Colorado River and Mohave Desert in 1776 (Kroeber, 1959:304). For other instances of California and neighboring Indians furnishing directions or drawing maps for Caucasian explorers, see Heizer (1958a, passim).

All of the paths mentioned in the preceding paragraph are not plotted on the accompanying map for one reason or another, usually lack of detailed information (e.g. McKee's route from Clear Lake to Humboldt Bay). Some, such as that described for Portola's expedition (trail 77)*, have been traced only in part because only a portion of the pertinent narrative may contain specific detail. Others have been plotted in their entirety because of assumed reasonable exactness, for example, "El Camino Viejo A Los Angeles" (trail 102), and Fages' route across the Cuyamaca Mountains to San Diego (trail 94).

Various observations and statements concerning the general course of travel or character of trails in California are on record, for example, Kroeber (1929:255) states that among the Valley Nisenan (Southern Maidu),

* See page 66 and Map 1.
"It is clear that native communications prevailingly followed the large streams." Barrett and Gifford (1'33: 256) observe, "Miwok trails were usually almost airline in their directness, running up hill and down dale without zigzags or detours." Referring to Wailaki trails, Powers (1877: 119) relates:

"Time and again I have wondered why the trails so laboriously climb over the highest part of the mountain. . . .

"When the whole face of the country is wooded alike, the old Indian trails will be found along the streams; but when it is somewhat open they invariably run along the ridges, a rod or two below the crest. . . . The California Indians seek open ground for their trails that they may not be surprised either by their enemies or by [animals]."

Along the trans-Sierran trails, Muir (1894:80) observed:

"It is interesting to observe how surely the alp-crossing animals of every kind fall into the same trails. The more rugged and inaccessible the general character of the topography of any particular region, the more surely will the trails of white men, Indians, bear, wild sheep, etc., be found converging in the best places."

Concerning these same trans-Sierran routes, Hindes (1959:13) states that, "Modern trails marked on the present day U. S. Geological Survey maps coincide to a great extent with old routes said to have been used by the Indians." Farmer (1935:156) says that the trail along the Santa Clara River (trail 77 on the accompanying map) followed the ridges above the canyons rather than the floors of the canyons.

In most regions Indian trails are difficult or impossible to recognize today, in fact many trails were originally so narrow that they served merely as footpaths for humans, and horses could not negotiate them in brush country (Dale, 1918:243). But in the arid desert regions of California one may still recognize at least remnants of the ancient pathways (Gates, 1909; Johnston and Johnston, 1957; Belden, 1958; Jones, 1936; Rogers, 1945:181; Wallace, 1958:8). Referring to these desert trails, Johnston and Johnston (op. cit., p. 23) observed:

"Although the singular word 'trail' will be used throughout this paper, in actuality seldom, and then but for brief stretches, did any of the recorded sections contain only one trail. Almost always there were two or more subsidiaries running parallel to what might be considered the main trunk."
Certain features have been suggested as being associated with Indian trails in different regions of the state. The best documented of such associations are the trailside "shrines" located at irregular intervals along numerous trails in the southern California deserts (Jones, op. cit.; Rogers, 1945:181; Johnston and Johnston, op. cit.; Jaeger, 1933:128; Wilhelm, 1951; Castetter and Bell, 1951:57; Schroeder, 1952:45). Such shrines were also present in Wappo territory (Yount, 1923:61; Heizer, 1953:247, Pl. 31a, b). These shrines consist of piles of rocks, many of which contain "offerings" of potsherds, beads, or other articles. Powers (op. cit., p. 58) and Goddard (1913:passim) relate that the Yurok dropped twigs and stones at the junctions of trails, which in some places accumulated into considerable piles of brush. Similar shrines were also erected by the Chilula (ibid, p. 280). The Yurok also shot arrows into Certain trees and made offerings at specific traditional resting places on the trail, as did the Wiyot (Loud, 1918:252-53). Other groups appear to have occasionally marked trails with rocks, for example the Yana (Anderson, 1909:16) and the Serrano (Campbell, 1931:18). Mallery (1886:34-35) suggests that pictographs are located at or near the origin of the several trails passing over the Santa Ynez Mountains in Chumash territory.

The question of time-depth relating to the establishment, use, or abandonment of the trails is an important one. It is practically impossible, however, in the light of present knowledge, to unravel such history or the time-span of the use of the trails. In this connection, it may be of interest to note a statement by Elsasser (n.d., p. 10): "It is obvious, of course, that trails, however faint, would have to connect one site with another whether the sites were used synchronically or diachronically."

The only date-range I have been able to find for the aboriginal, i.e., pre-European contact, use of a trail (or at least portions of a trail) in California is supplied by Harner (1957:36). Such dating is based upon the occurrence of datable pottery at the trailside shrines along the San Gorgonio-Big Maria trail as defined by Johnston and Johnston (op. cit., passim; trails 83, 86, 87, and 91 on Map 1 of this paper). The range of dates as cited by Harner extends from 900 A.D. into the historic period, ca. 1900 A.D.

Proposed trails 8 and 9 on Map 1 terminate at Glass Mountain, the formation of which has been dated by means of radiocarbon analysis. Concerning this date, Heizer (1958b:3, discussion of sample C-673) says, "Glass Mountain obsidian, widely used by Indians in Northern California . . . could not, therefore, have been available before 600 A.D."

At present one may only assume that the trails plotted on the map represent different orders of time of use. Some, such as the Mohave trade route, may be quite ancient, while others, such as the "Walla Walla Road" and "El Camino Viejo A Los Angeles," may be quite recent.
In aboriginal California, the most prevalent type of trade appears to have been a simple exchange of goods considered to be of approximately the same value. The outright purchase of desired commodities, through a developed monetary system based primarily upon lengths of strings of clam shell disc beads, was perhaps the next most common method of obtaining desired articles.

Other less common, although not infrequently practiced, methods of securing goods include: the free reciprocal use of at least portions of one another's resources (Merriam, 1955: 76; Barrett, 1908: 134, 1910: 240; Drucker, 1937: 289; Garth, 1953: 131, 154; Gifford, 1931: 35); the purchase of a favorable locale in another territory which then became the semi-permanently owned property of the purchaser (Waterman, 1920: 222); the payment to a "chief" to allow a one-trip hunting, fishing, or gathering expedition (Garth, op. cit., p. 136; Loeb, 1926: 195); a direct clandestine invasion of another group's territory to obtain articles by theft, which frequently resulted in warfare (Merriam, 1955: 16-17; Kroeber, 1925: 236; Loeb, op. cit., p. 174).

In addition to formal barter or purchase of goods, many of the California tribes practiced a generally informal exchange of "gifts" (Boscana, 1933: 42); however, it was not gift-giving without expectation of reciprocal exchange, for the recipient was generally expected to return items of equal or most often greater value at some future time.

Two restrictions to primitive trade noted by MacLeod (1927: 271 ff.) appear not to have operated in aboriginal California. The first of these involves a tribute payment for, or imposition of, a toll on goods passing through the territory of an intervening group. In the first place, the nature of intertribal relations and transportation and exchange of goods militated against such restrictions. Seldom in California did one group pass through another's territory, and in the few cases where this did take place, certain circumstances existed which prevented or affected such tribute or toll collection. As one illustration could be cited the case of the Mohave who traveled through the territory of several intervening groups to trade with the Yokuts and Chumash. Much of the country over which they traveled was very sparsely populated desert. In addition, the Mohave were perhaps the most fierce, fearsome, and feared fighters in California (Stewart, K. M., 1947), and any attempt to exact tribute from them would probably have been met with a kind of warfare quite foreign to the usual Californian pattern of taking flight when the first man was wounded. A similar set of circumstances may be pointed out in relation to the Modocs, who were feared as warriors in northern California as much as the Mohave were in southern California, and who were perhaps the only other tribe besides the latter in the state who habitually traveled through the territory of other tribes.
Another instance concerns the direct trade relations between the Eastern Mono (Northern Paiute) and the Yokuts. In this case, the intervening group through whose territory the Paiute passed, the Western Mono (Monachi), were close relatives, both linguistically and socially, of the Paiute. Members of the Paiute trading parties accordingly were welcomed as friends by the Monachi, although the Yokuts with whom they traded feared and disliked them.

Much the same set of circumstances as cited above prevailed in California in the few cases where direct transport of goods was accomplished through the lands of an intervening group.

The procedure most widely recognized in California was the exchange of goods between tribes having a common border. In most cases, groups fortunate enough to be geographically situated to act as middlemen in the flow of commodities naturally marked up the "price" of articles passing through their lands, but this resulted only after the goods had been incorporated into their body of products available for trade.

The second restriction of the two alluded to above involved individual monopoly for discovering a new trade item. It is true that certain near-monopolies existed on a tribal basis in California, such as the Bomo near-monopoly in the manufacture of magnesite beads and the making of clam disc beads by the Coast Miwok and Pomo, but these were due to geographic considerations rather than to a formally recognized right. (Some additional references relating to trade restrictions in California which may be cited for the benefit of the interested reader are: Schenck, 1926:143; Forde, 1931:105; Muir, 1917:80-81; Stratton, 1935:105-6; Barrett and Gifford, op. cit., pp. 251, 256; Holmes, 1900:177; Treganza, 1952:20-21; Garth, op. cit., pp. 131, 137; Murphey, 1941:360-61).

Despite what has been said above, it appears that there were in fact some factors which tended to restrict a free and reciprocal exchange of goods in aboriginal California. Some neighboring tribes, for instance, felt hostility or fear toward one another, or were perhaps adversely affected by geographical features, such as existed between the Washo and Maidu, who apparently had little to do with each other socially or in a trading relationship (Kroeber, 1925:399; Dixon, 1905:201). The Yuma had little contact with the Cocopah, except perhaps in warfare (Whipple, op. cit., p. 19). Even though the Kings River Yokuts were quite unfriendly to, and distrustful of, the Monachi and Mono-Paiute, a great deal of goods nevertheless passed between them. However, concerning this relationship, Gayton (1946:259) points out:

"Thus two types of environmental factor, topographic access or hindrance,
and 'weather-permitting' or hindering, affected the economic relation of the foothill Yokuts with their neighbors. Easy access does not necessarily mean exchange of goods or other cultural items, but barriers do retard them. On the other hand, differing environments mean different products, and had Eastern Mono products been identical with Yokuts (yet equally accessible) the impetus to exchange would have been wanting."

On the other hand, some neighboring tribes were apparently very friendly and enjoyed much visiting back and forth; for example, the Tibatulabal and Southern Yokuts (Kroeber, 1925:606), the Northeastern Pomo and the Yuki (Barrett, 1904:190), and the Tolowa and the Karok (Waterman, 1925:528). Such visiting would tend also to accelerate exchange of commodities.

Generalized routes or streams of diffusion of items have been noted in aboriginal California. Probably the best example of this is seen in the flow of clam disc beads northward from the region about San Francisco Bay and the reciprocal southward movement of pelts, sinew-backed bows, and stonework. The Central and Northern Wintun acted as middle-men in this exchange, contributing little or nothing to the flow except perhaps the re-grinding of imperfect shell beads, yet profiting from the opposing streams of diffusion (Goldschmidt, 1951:336-37).

Kroeber (1925:309) notes the exchange of shell beads up the Pit River for furs passing downstream.

Gayton (1948a:56) observed the eastward flow of shell beads from the Chumash through the Yokuts to the Eastern Mono (Mono–Paiute) as opposed to a westward movement of various goods in exchange.

The routes of diffusion of various religious cults and movements in California are presented by Du Bois (1939). These are relatively late in time and it must therefore be recognized that they were possibly greatly altered by historic conditions and may not reflect an aboriginal pattern of paths of diffusion.

One of the most interesting accounts concerning long-distance travel for trading purposes in California is based on the expeditions of Walla Walla, Cayuse, and Nez Percé Indians, who traveled, after 1800, on horseback from eastern Washington up the Deschutes River, thence down the Pit and Sacramento Rivers as far south as Sutter's Fort (Heizer, 1942; Maloney, 1945:230; Hussey and Ames, 1942) and the cinnabar deposits at New Almaden, south of San Francisco (Heizer and Treganza, op. cit., p. 298).

That this trail, "the Walla Walla Road," is probably quite recent is admitted by the investigators cited above. It conceivably could be, how-
ever, an ancient diffusion route (Davis, 1959: 26, Map 1) which through time became a trail in the usually understood sense.

It will be noted in the accompanying list of tribes and articles traded, that all tribal divisions and dialect groups are not consistently segregated; for example, the Pomo are treated as a single entity, while each of the separate Yokuts groups is treated individually. The reason for this variance is that many of the various Pomo groups traveled quite freely throughout much of the entire tribal area at different times of the year, and also because many references do not specify the precise subgroup involved in trading activities. On the other hand, even though the Yokuts are occasionally referred to generically, most of the references to trading practices are specific.

The number of times each article or commodity is mentioned in the literature as having been traded from one group to another is presented in the following table, arranged in descending order of frequency. One occurrence as an export or import is counted for each mention of a group's trading an article to or receiving an item from another group. However, if the reference is to one group's trading three different kinds of animal hides, for example, to one other group, that occurrence is counted only as one rather than three. On the other hand, if it is stated by informants that one group traded but one kind of hide to three other groups, such occurrence is counted as three.

From Table 1, it appears that the classes of items most frequently traded among the California Indians were food (including salt) and tobacco (mentioned 321 times), followed in order by beads and shell products (230), various manufactured goods (205), various raw materials (174), clothing and textiles (68), feathers and birds (25), and miscellaneous items (15).

Swanton (1907:446) noted that shell beads and animal hides were the most common media of exchange in aboriginal North America. Concerning their utilization as items possessing fixed values, this statement is possibly true; however, in California, as stated above, salt as a single item, and foods in general, apparently were more often exchanged.

As Driver and Massey (1957:377) remarked in summarizing Sample's (op. cit.) data:

"It is apparent that there is no simple explanation of the frequencies of the various trade goods. They are determined by local differences in availability, local differences in craft specialization, local differences in re-tradability with another neighbor, and local tastes and preferences for one item instead of another."
On Map 1 are depicted trails known to have been utilized by the aboriginal inhabitants of California, and proposed routes whose probable existence is supported by substantiating evidence. Only major trails are numbered and references are cited for them individually. For unnumbered trails in a geographic region, references are cited only in general terms for the area as a whole. No trail appears on the map for which there is no supporting evidence in the literature.

It may seem to be a simple matter to plot a series of trails on a map, assign numbers to each trail, and then cite references for defined routes. However, numerous difficulties arise in the process of attempting to carry out what appears to be a simple mechanical procedure. For example, J. R. Swanton has remarked in his preface to Myer's (op. cit., p. 731) work:

"It should be remembered that there is and always must be considerable artificiality in the determination of what constitutes a trail, and where a trail begins and ends."

In addition to this problem is the one presented by the considerable overlapping of references to a trail. For example, the trail along the Klamath River could be completed only after examining references to parts of the route in several different sources. In spite of such difficulties as these, it is believed that specific information concerning a particular path may be found in one or more of the references cited for the region in which the trail occurred.

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<td>Molluscs and echinoderms</td>
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<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Caucasian goods (guns, horses, glass beads, axes, fishhooks)</td>
<td>8</td>
<td>11</td>
<td>19</td>
</tr>
<tr>
<td>Rabbit-skin blankets</td>
<td>9</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Arrows</td>
<td>9</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Miscellaneous seeds and nuts</td>
<td>7</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>Seaweed and kelp</td>
<td>7</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>Piñon nuts</td>
<td>6</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Stone arrowheads, blades, etc.</td>
<td>6</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Miscellaneous beads</td>
<td>5</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Animal meat</td>
<td>6</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Tobacco</td>
<td>5</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Woodpecker scalps</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Miscellaneous fruits and berries</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Tailored skin slothing</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Moccasins</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Magnesite beads</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Dugout canoes</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Eagle and hawk feathers</td>
<td>6</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Insect foods</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Tobacco seeds</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Skin robes</td>
<td>5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Basketry raw materials</td>
<td>5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Steatite</td>
<td>5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Wooden fire drills</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Horn for spoons</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Material for fiber</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Pine nut beads</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Miscellaneous foods</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Pottery</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Yellowhammer feathers</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Asghaltum</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Item</td>
<td>Imported</td>
<td>Exported</td>
<td>Total</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>Miscellaneous vegetal material</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Shell ornaments</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Woven fiber blankets and cloth</td>
<td>4</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Miscellaneous sea foods</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Dogs</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Seeds for planting</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Woven tule or fiber mats</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Hot rock lifters of wood</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Steatite vessels</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Sinew</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Gourd rattles</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Cordage and rope</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Miscellaneous articles</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Olivella shell beads</strong></td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Juniper seed beads</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Woven pack straps</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Unspecified clothing</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Nets</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Skirts (other than hide)</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Stone and wood tobacco pipes</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Miscellaneous chipped stone tools</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Wooden vessels</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Log rafts</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Stone mortars and pestles</strong></td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Clay for pottery</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pumice stone</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pepperwood pods (for hair dressing)</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Human slaves</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Miscellaneous unworked stone</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Steatite beads</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Live eagles</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Fiber sandals</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Feather robes</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Sea lion harpoon heads</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Wooden digging sticks</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Wood for bows</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Woven wool ponchos</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>
On the following pages are set forth the details of trade, with the ethnographic groups concerned, arranged in alphabetic order. The interconnections between Californian groups are shown graphically on Map 2. Each group shown as a major heading may be keyed to Map 2 by means of a following identification number and letter, as, for example, **ACHOMAWI:6e**.

<table>
<thead>
<tr>
<th>Supplied to:</th>
<th>Received from:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACHOMAWI:6e</td>
<td>ACHOMAWI:6e</td>
</tr>
<tr>
<td><strong>Atsugewi</strong></td>
<td><strong>Modoc</strong></td>
</tr>
<tr>
<td>Basketry caps, salmon flour,</td>
<td>Furs, bows, dentalia, horses</td>
</tr>
<tr>
<td>acorns, salmon, dentalia,</td>
<td></td>
</tr>
<tr>
<td>tule baskets, steatite,</td>
<td></td>
</tr>
<tr>
<td>rabbit-skin blankets</td>
<td></td>
</tr>
<tr>
<td><strong>Modoc</strong></td>
<td><strong>Atsugewi</strong></td>
</tr>
<tr>
<td>Shell beads, shallow bowl-</td>
<td>Seed foods, epos roots (Pteridendia bolanden), other roots and vegetables, furs, hides, meat</td>
</tr>
<tr>
<td>shaped twined baskets, braided</td>
<td></td>
</tr>
<tr>
<td>grass skirts, pine nut string</td>
<td></td>
</tr>
<tr>
<td>skirts</td>
<td></td>
</tr>
<tr>
<td><strong>Northeastern Maidu</strong></td>
<td><strong>Northern Wintun</strong></td>
</tr>
<tr>
<td>Green pigment, obsidian, bows,</td>
<td>Salt, furs, bows</td>
</tr>
<tr>
<td>arrows, deer skins, sugar</td>
<td></td>
</tr>
<tr>
<td>pine nuts, shell beads</td>
<td></td>
</tr>
<tr>
<td><strong>Northern Wintun</strong></td>
<td><strong>Northern Paiute</strong></td>
</tr>
<tr>
<td>Sinew-backed bows, arrows,</td>
<td>Sinew, arrowheads, red paint,</td>
</tr>
<tr>
<td>baskets, dried fish, women's</td>
<td>buckskins, moccasins, rabbit-</td>
</tr>
<tr>
<td>basketry caps, clam disc</td>
<td>skin blankets, various foods,</td>
</tr>
<tr>
<td>beads, dried salmon flour</td>
<td>basketry water bottles</td>
</tr>
<tr>
<td><strong>Yana</strong></td>
<td><strong>Yana</strong></td>
</tr>
<tr>
<td>Obsidian</td>
<td>Buckeye fire drills, deer hides,</td>
</tr>
<tr>
<td></td>
<td>buckskin, dentalia, salt</td>
</tr>
<tr>
<td><strong>Northern Paiute</strong></td>
<td><strong>Northern Wintun</strong></td>
</tr>
<tr>
<td>Sinew, arrowheads, red paint,</td>
<td>Salmon flour, clam disc beads,</td>
</tr>
<tr>
<td>buckskins, moccasins, rabbit-</td>
<td>dentalia</td>
</tr>
<tr>
<td>skin blankets, various foods,</td>
<td></td>
</tr>
<tr>
<td>basketry water bottles</td>
<td></td>
</tr>
<tr>
<td><strong>Shasta</strong></td>
<td><strong>Northern Paiute</strong></td>
</tr>
<tr>
<td>Dentalia</td>
<td>Dentalia</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Northeastern Maidu</strong></td>
<td><strong>Northern Paiute</strong></td>
</tr>
<tr>
<td>Clam disc beads, salt,</td>
<td>Clam disc beads, salt,</td>
</tr>
<tr>
<td>digger pine nuts</td>
<td>dagger pine nuts</td>
</tr>
<tr>
<td><strong>Unspecified tribes</strong></td>
<td><strong>Unspecified tribes</strong></td>
</tr>
<tr>
<td>Raw sinew, bows</td>
<td>Completed sinew-backed bows,</td>
</tr>
<tr>
<td></td>
<td>magnesite beads, Olivella shells, dentalia</td>
</tr>
</tbody>
</table>
ACHOMAWI [continued]


ATSUGEWI: 6f

Supplied to:

Achomawi
Furs, hides, meat, seed foods, epos roots, other roots and vegetables

Northern Paiute
Bows, baskets, shell beads

Northeastern Maidu
Bows, twined baskets, furs, horses

Yana
Buckskin, arrows, wildcat quivers, woodpecker scalps

Received from:

Achomawi
Basketry caps, salmon flour, steahite, acorns, salmon; dentalia, tule baskets, rabbit-skin blankets

Northern Paiute
Horses, buckskins, red ochre, glass beads, guns, Olivella beads

Yana
Salt, dentalia, buckeye fire drills

Klamath
Baskets

Northeastern Maidu
Clam disc beads, coiled baskets, skins

Northern Wintun
Clam disc beads, dentalia


BUENA VISTA YOKUTS: 20g

Supplied to:

Southern Valley Yokuts: Asphaltum

Reference: Latta, 1949: 65
Received from:

"The East"                      Gourd rattles, red paint
Yuma                               Gourd rattles
Chemehuevi                       Basketry caps, conical burden baskets

References:  Kroeber, 1908:42,62; Curtis, 1924:15:25

CENTRAL MIWOK:18e

Supplied to:

Eastern Mono                     Shell beads, glass beads, acorns, squaw berries, elderberries, manzanita berries, a fungus used in paint, baskets, sea shells, arrows
Washo                             Acorns, soaproot leaves for brushes
Yokuts (subgroup not specified)   Baskets, bows, arrows

Received from:

Eastern Mono                     Pine nuts, pandora moth (Coloradia pandora) caterpillars, kutsavi (pupae of the fly Ephydra hians), baskets, red paint, white paint, salt, pumice stone, piñon nuts, buffalo robes, rabbit-skin blankets
Yokuts (subgroup not specified)   Dogs

References:  Clark, 1904:45-46; Bunnell, 1911:86; Barrett, 1917:14-15; Barrett and Gifford, 1933:193,221,224,270; Steward, 1933:257; Godfrey, 1941:57; Aginsky, 1943:454; McIntyre, 1949:5.

CENTRAL WINTUN (NOMLAKI):16b

Supplied to:

Northwestern Maidu    Clam disc beads, other shell beads
Patwin                Pine nuts, acorns, seeds, game, bear hides, beads, sinew-backed bows
Yuki                  Salt
Yana                  Clam disc beads, magnesite beads
CENTRAL WINTUN (NOMLAKI) [continued]

Received from:

**Patwin**  
Salmon, river otter pelts, game, beads

Northern **Wintun**  
Obsidian

Yana  
Baskets

Yuki  
Black bearskins


CHEMehUEVI (SOUTHERN PAIUTE) : 21e

**Supplied to:**

Western Yavapai  
Shell beads

Cahuilla  
Basketry caps, conical burden baskets

References: Kroeber, 1908:42; Gifford, 1936:254.

CHILULa: 1d

**Supplied to:**

Yurok  
White grass used in basketry

Reference: O'Neale, 1932:144.

CHIMARIKO: 9

**Received from:**

Wintun  
Obsidian


COAST MIWOK: 18a

**Supplied to:**

Wappo  
Clam shells, abalone shells

Pomo  
Clam shells, clam disc beads

References: Driver, 1936:194; Curtis, 1924:13, 131, 257.
COAST YUKI: 4c

Supplied to:

- Kato: Mussels, seaweed, dry kelp for salt, salt, surf fish, abalone, giant chiton
- Karok: Whole clam shells
- Yuki: Surf fish, abalone, giant chiton, mussels, seaweed, dry kelp for salt, shells of Hinnites giganteus
- Yuki Salt, fish

Received from:

- Kato or Yuki (?): Tobacco
- Kato: Redbud baskets, hazel bows
- Yuki: Obsidian
- Pomo: Clam disc beads, acorns, fire drills of buckeye wood, beads of H. giganteus shell
- "The North": Bone sea-lion harpoon head, red obsidian


COSTANOAN: 19c,f

Supplied to:

- Yokuts (subgroup referred to as "Tulare Yokuts"): Mussels, abalone shells, salt, dried abalone
- Sierra Miwok (subgroup not specified): Olivella shells

Received from:

- Yokuts (subgroup referred to as "Tulare Yokuts"): Piñon nuts

**Diegueño: 15b**

**Supplied to:**

<table>
<thead>
<tr>
<th>Tribe</th>
<th>Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mohave</td>
<td>Acorns</td>
</tr>
<tr>
<td>Kamia</td>
<td>Tobacco, acorns, baked mescal roots, yucca fiber, sandals, baskets, carrying nets, eagle feathers</td>
</tr>
<tr>
<td>Cocopa</td>
<td>Eagle feathers</td>
</tr>
<tr>
<td>Yuma</td>
<td>Acorns</td>
</tr>
</tbody>
</table>

**Received from:**

<table>
<thead>
<tr>
<th>Tribe</th>
<th>Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocopa</td>
<td>Salt</td>
</tr>
<tr>
<td>Mohave</td>
<td><strong>Gourd</strong> seeds</td>
</tr>
<tr>
<td>Kamia</td>
<td>Vegetal foods, salt</td>
</tr>
<tr>
<td>&quot;The Desert&quot;</td>
<td>Tule roots, bulbs, cattail sprouts, yucca leaves, mescal, pine nuts, manzanita berries, chokecherries, mesquite beans</td>
</tr>
<tr>
<td>Yuma</td>
<td><strong>Gourd</strong> seeds</td>
</tr>
</tbody>
</table>


**Eastern Mono (Northern Paiute): 21b**

**Supplied to:**

<table>
<thead>
<tr>
<th>Tribe</th>
<th>Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;The West&quot;</td>
<td>Mineral paint, salt, pine nuts, seed food, obsidian, rabbit-skin blankets, tobacco, baskets, buckskins, pottery vessels, <strong>clay pipes</strong></td>
</tr>
<tr>
<td>Central Miwok</td>
<td>Pine nuts, pandora moth caterpillars, kutsavi, baskets, red paint, <strong>white paint</strong>, salt, <strong>pumice stone</strong>, rabbit-skin blankets</td>
</tr>
</tbody>
</table>

1. The list includes several mountain grown species, probably actually obtained from the Mountain Cahuilla rather than the desert.
2. Also called Owens Valley or Mono Lake Paiute.
3. Central Miwok, Southern Miwok, Western Mono, Tuhatulabal, Yokuts.
Southern Miwok  
Kings River Yokuts  
Washo  
Koso  
Western Mono'  

Yokuts (subgroup not specified)  
Tübatulabal  

Received from:  
"The West"  
Central Miwok  
Paiute 'to east'  
Southern Miwok  

- Rabbit-skin blankets, basketry materials
- Sinew-backed bows, piñon nuts, obsidian, moccasins, rock salt, jerked deer meat, hot rock lifters
- Red paint
- Kutsavi
- Shell beads, various goods
- Mineral paint, pitch-lined basketry water bottles, acorns, rock salt, piñon nuts, mountain sheep-skins, moccasins, tailored sleeveless buckskin jackets, fox-skin leggings, hot rock lifters, sinew-backed bows, unfinished obsidian arrowheads, red paint
- Salt, piñon nuts
- Salt, pine nuts, baskets, red and white paint, tanned deer skins, kutsavi, gandora moth caterpillars
- Squaw berries, 4 shell beads, glass beads, acorns, baskets, manzanita berries, bear skins, rabbit-skin blankets, elderberries
- Arrows, baskets, clam disc beads, shell beads, glass beads, acorns, squaw berries, elderberries, manzanita berries, a fungus used in paint
- Black paint, yellow paint
- Clam disc beads

4. In previous literature these are believed to have been referred to as "sow-berries" (Steward, 1933: 257; Sample, 1950: 17). However, an attempt to determine the scientific name for sow berries has failed, and it is believed that the species referred to is Rhus trilobata Nutt = (Squaw Bush) which grows in narrow valleys or canyon bottoms along the western slope of the Sierra Nevada at elevations between 1000-4000 feet (Jepson, 1951:608). Its branches were a favorite basketry material (cf. Brubaker, 1926:77).
Received from:

Tule-Kaweah Yokuts  
Deer, antelope, and elk skins, steatite, salt grass, salt, baskets, shell beads

Western Mono  
Shell beads, acorn meal, fine Yokuts baskets

Koso  
Salt

Yokuts (subgroup not specified)  
Shell ornaments, buckskins, acorn meal

Tribalinalabal  
Shell beads, acorns, manzanita berries, elderberries, baskets, rabbit-skin blankets


GABRIELINO5:21m

Supplied to:

Serrano  
Shell beads, dried fish, sea otter pelts, steatite vessels

Unspecified tribes  
Roots

Received from:

Serrano  
Acorns, deer 'skins, seed foods

References: Kroeber, 1925:630; Strong, 1929:95-96; Eisen, 1905:9.

HALCHIDHOMA6:15e

Supplied to:

Maricopa  
Tobacco seeds

5. Apparently the Island (Santa Catalina) Gabrielino carried on most of the trade with the mainland group, who, in turn, traded the material inland.
6. Refers to trade carried on before the Halchidhoma were driven out of their former lands in the Colorado River Valley.
Hopi

Received from:

Hopi

Woven blankets and cloth

References: Spier, 1933: 43; Coues, 1900: 423; Bolton, 1930: 2: 386

HUCHNOM: 4b

Supplied to:

Yuki

Clam disc beads, sea foods, clams, salt, whole clam shells, kelp

Lassik

Clam disc beads

References: Spier, 1933: 43; Coues, 1900: 423; Bolton, 1930: 2: 386

Received from:

Pamid

Clam disc beads


HUPA: 1c

Supplied to:

Yurok

Inland food, skins, acorns

Mattole

Grass for rope, pine nut beads

Shasta

Acorns, baskets, dentalia, salt

Received from:

Yurok

Woven pack straps, smelt, redwood dugout canoes, dried sea foods, surf fish, mussels, salty seaweed, dentalia

Wiyot

White deerskins

Mattole

Angelica root, tobacco, Haliotis shell, various foods

Northern Wintun

Salt

Shasta

Buckskin, pine nuts, horn for spoons

**ISLAND CHUMASH:14h**

**Supplied to:**

Mainland **Chumash**

Chipped stone implements, fish bone beads, shell **beads**, baskets, a dark stone for **digging-stick** weights

**Received from:**

Mainland **Chumash**

Seeds, **acorns**, bows, arrows

**References:**  

---

**KAMIA:15c**

**Supplied to:**

Diegueño

Vegetal foods, salt

Yuma

Tobacco

**Received from:**

Diegueño

Tobacco, acorns, baked mescal roots, yucca fiber sandals, baskets, eagle feathers, carrying nets

Cocopa

Shells from Gulf of California

Yuma

Tobacco

**References:**  

---

**KAROK:8**

**Supplied to:**

Shasta

Tobacco seeds, baskets, dentalia, salt, sea-weed, tan oak acorns, canoes, pods for hair dressing, pepperwood, Haliotis ornaments, Haliotis shells, whole Olivella shells

Tolowa

Soaproot, pine nut beads

Konomihu

Dentalia, baskets

Yurok

Dentalia
Received from:

- Shasta: Basketry caps, juniper beads, salt, dentalia, white deer skins, woodpecker scalps, obsidian, sugar pine nuts, wolf skins, deer skins, large obsidian blades, horn for spoons
- Wailaki: Dentalia
- Coast Yuki: Whole clam shells
- Yurok: Whole *Olivella* shells, tobacco seeds, dugout canoes, clam shells, pipes, bows
- Tolowa: Smelt, dentalia
- Nongatl: Salt
- Konomihu: Furs, deer-'skin clothing
- Unspecified tribes: Clam disc beads


KATO: 1k

Supplied to:

- Lassik: Clam disc beads
- Coast Yuki: Hazelwood bows
- Wailaki: Baskets, arrows, clothing

Received from:

- Coast Yuki: Salt, mussels, seaweed, abalone, giant chiton, surf fish, clam shells, dry kelp for salt
- "The North": Dogs
- Wailaki: Dentalia
- Northern Wintun: Salt
- Unspecified tribes: Hazelwood self bows

KAWAIISU: 21f

Received from:

Tilbatulabal (?) Concave-based arrow heads, double-notch based arrow heads


KINGS RIVER YOKUTS: 20d

Supplied to:

Tule-Kaweah Yokuts Clay for pottery, black paint, black sword fern root and redbud bark for basketry

Received from:

Tule-Kaweah Yokuts Cladium roots, bunch grass, soaproot brushes, salt from salt grass, baskets, various roots and herbs

Western Mono Sinew-backed bows

Eastern Mono Red paint


KITANEMUK: 21h

Received from:

Chumash Wooden vessels inlaid with Haliotis shell


KONOMIHU: 6c

Supplied to:

Karok (?) Furs, deer-skin clothing

New River Shasta (?) Furs, deer-skin clothing

Received from:

Karok (?) Dentalia, baskets

New River Shasta (?) Clam disc beads

KOSO (PANAMINT SHOSHONE): 21d

**Supplied to:**

- Eastern Mono Salt

**Received from:**

- Eastern Mono Shell beads, various goods

Reference: Steward, 1938:78.

LAKE MIWOK: 18b

**Received from:**

- Pomo Acorns
- Unspecified tribes All bows


LASSIK: 1h

**Received from:**

- Northern Wintun Salt, obsidian
- Wailaki Salt, clam disc beads
- Nongatl Dentalia
- Huchnom Clam disc beads
- Kato Clam disc beads
- "The North" Dogs


LUISEÑO (not indicated on map)

**Received from:**

- Unspecified tribes Mesquite beans

Reference: Sparkman, 1908:196
MAINLAND CHUMASH: e.g. 14d

**Supplied to:**

- **Kitanemuk**
  - Wooden vessels inlaid with *Haliotis* shell
- **Island Chumash**
  - Seeds, acorns, bows, arrows
- **Southern Valley Yokuts**
  - Shell beads, whole *pismo* clam shells, *Haliotis* shells, *Olivella* shells, keyhole limpet shells, cowrie shells, sea urchin shells, dried starfish
- **Yokuts (subgroup not specified)**
  - Shell ornaments
- **Tübatalabal**
  - Shell beads, shell cylinders, steatite, asphaltum, fish
- **Salinan**
  - Steatite vessels, columella beads, possibly also steatite and wooden vessels

**Received from:**

- **Island Chumash**
  - Chipped stone implements, a dark stone for digging-stick weights, fish bone beads, shell beads, baskets
- **Southern Valley Yokuts**
  - Fish, obsidian, salt from salt grass, seed foods, steatite beads, various herbs, vegetables
- **Tübatalabal**
  - Piñon nuts
- **Yokuts (subgroup not specified)**
  - Clam shells, asphaltum, buckskins, obsidian, abalone
- **"The Interior"**
  - Deer skins, acorns, fish, grasshoppers
- **Mohave**
  - Unspecified goods


MATTOLE: 1f

**Supplied to:**

- **Hupa**
  - Angelica root, tobacco, *Haliotis* shell, various foods
Wiyot

Received from:

Hupa

Wiyot

References: Nomland, 1938: 105; Driver, 1939: 386.

MODOC: 5

Supplied to:

Klamath

Human slaves from surrounding tribes, shallow bowl-shaped twined baskets, blankets, beads, clothing, axes, spears, fishhooks

Achomawi

Furs, bows, dentalia, horses

Shasta

Buckskin dresses and shirts

Received from:

Achomawi

Shell beads, shallow bowl-shaped twined baskets, braided grass skirts, pine nut string skirts

Shasta

Bows, dentalia

Klamath

Women slaves, various hides

Unspecified tribes

Wooden war clubs with stone or bone insert, grooved stone axes, feather blankets


MOHAVE: 15f

Supplied to:

Western Mono-Yokuts

Pottery

Diegueño

Gourd seeds

7. Alsa taken to the Dalles to trade for horses,
8. "Warm Springs Indians"
MOHAVE [continued]

Supplied to:

Havasupai  Horses

Yuma       Gourds, eagle feathers

Walapai    Horses, shells (halketap), shell beads, glass beads, beadwork, corn, dried pumpkin, screw and mesquite beans, kwa'va seeds, beans

Received from:

Walapai    Rabbit-skin blankets, red paint, meat of deer, mountain sheep, antelope, cottontail, jackrabbit, rat; Hopi and Navaho blankets, eagles, eagle feathers, buckskin? mountain sheep skins, eagle down, chicken. hawk down.

Chemehuevi Eagle down, chicken hawk down

Western Yavapai Mescal, red paint, eagle down, chicken hawk down

Diegueño     Acorns

Paiute       Rabbit-skin blankets

Havasupai   Pueblo blankets

Chumash      Unspecified goods

Navaho       Woven wool ponchos

Unspecified tribes Blankets, basketry


NW RIVER SHASTA:6b

Supplied to:

Kononimihu Clam disc beads

Received from:

Kononimihu Furs, deer skin clothing

Reference:  Kroeber, 1925: 284
NONGAIL: 1g

Supplied to:

Lassik                  Dentalia
Karok                   Salt

Received from:

Northern Wintun        Salt

References: Driver, 1939:382; Essene, 1942:61.

NORTHEASTERN MAIDU: 17a

Supplied to:

Atsugewi                Deer hides, clam disc beads, coiled baskets, 
                        skins, bows
Northwestern Maidu      Bows and arrows, skins, sugar pine nuts, 
                        shell beads, deer hides, miscellaneous 
                        foods, acorns
Northern Paiute         Dentalia
Washo                   Papam bulbs, species unidentified
Achomawoi               Clam disc beads, salt, digger pine nuts

Received from:

Atsugewi                Bows, twined baskets, furs
Northwestern Maidu      Clam disc beads, other shell beads, acorns, 
                        salmon, salt, digger pine nuts
Achomawoi               Obsidian, green pigment, shell beads, bows, 
                        arrows, deer skins, sugar pine nuts
Unspecified tribes      Wood for sinew-backed bows, blue pigment


NORTHERN HILL YOKUTS: 20c

Supplied to:

Western Mono            Acorns, willow bark baskets, shell beads
NORTHERN HILL YOKUTS [continued]

Received from:

Western Mono  Rabbit-skin blankets, moccasins, rock salt, red and blue paint, piñon nuts


NORTHERN MIWOK: 18d

Supplied to:

Plains Miwok  Finished arrowheads, digger pine nuts, salt, obsidian

Washo  Acorns, shell beads, sea shells, baskets

Received from:

PaiuteS  Baskets

Plains Miwok  Grass seeds, fish

Washo  Salt

References: Holmes, 1900:172; Barrett and Gifford, 1933:193,255-256.

NORTHERN PAIUTE (PAVIOTSO): 21a

Supplied to:

Achomawi  Basketry water bottles, sinew, arrowheads, red paint, buckskins, moccasins, rabbit-skin blankets, various foods

Atsugewi  Horses, buckskins, red ochre, glass beads, guns, Olivella beads

Received from:

Achomawi  Sinew-backed bows, arrows, baskets, dried fish, women's basketry caps, clam disc beads, dried salmon flour

Atsugewi  Bows, baskets, shell beads

Northeastern Maidu  Papam bulbs


NORTHERN VALLEY YOKUTS:20a

Supplied to:

Miwok (subgroups not specified)

Dogs

Received from:

Miwok (subgroups not specified)

Baskets, bows, arrows

Costanoan

Mussels, abalone shells


NORTHERN WINTUN:16a

Supplied to:

Shasta

Deer hides, woodpecker scalps, baskets, acorns, pine nut beads, clam disc beads, dried salmon, clams, shell beads

Chimariko

Obsidian

Atsugewi

Clam disc beads, dentalia, acorns

Lassik

Salt, obsidian

Yana

Magnesite beads

Hupa

Salt

Nongat

Salt

Northwestern Maidu

Shell beads

Kato

Salt

Achomawi

Salmon flour, clam disc beads, dentalia

Central Wintun

Obsidian

Received from:

Shasta

Bows, arrow heads, manzanita berries, pelts, meat, dentalia, obsidian, deer skins, sugar pine nuts, green pigment
NORTHERN WINTUN [continued]

Received from:

Achomawi  Salt, furs, bows
Yana          Salt

Curtis, 1924:13:131; Kroeber, 1925:287,418; Du Bois, 1935:25,
Driver, 1939:382; Essene, 1942:61; Voegelin, E. W., 1942:198,201;
Sapir and Spier, 1943:255; Holt, 1946:312; Goldschmidt, 1951:419;

NORTHWESTERN MAIDU:17b

Supplied to:

Northeastern Maidu  Clam disc beads, other shell beads, salmon,
salt, digger pine nuts
Patwin             Obsidian
Southern Maidu     Log rafts
Yana               Clam disc beads

Received from:

Central Wintun     Clam disc beads, other shell beads
Northeastern Maidu Bows and arrows, skins, sugar pine nuts,
                   shell beads, deer hides, miscellaneous
                   foods, acorns
Northern Wintun    Shell beads

References: Dixon, 1905:201,202; Kroeber, 1925:399,421; 1929:260;

PATWIN:16d

Supplied to:

Central Wintun¹⁰  Salmon, river otter pelts, game, beads
Pomo               Woodpecker scalp belts, cordage for making
deer nets, shell beads, sinew-backed bows,
yellow hammer headbands

¹⁰. Items not bartered, paid for with shell beads by both parties.
<table>
<thead>
<tr>
<th>Region</th>
<th>Supplies</th>
<th>Received from</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wappo</td>
<td>Sinew-backed bows</td>
<td>Southern Maidu</td>
<td>Shell beads, abalone shells</td>
</tr>
<tr>
<td>Southern Maidu</td>
<td></td>
<td>Central Wintun</td>
<td>Pine nuts, acorns, seeds, game, bear hides, beads, sinew-backed bows</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Southern Maidu</td>
<td>Obsidian, yellow hammer and woodpecker feathers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Northwestern Maidu</td>
<td>Obsidian</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pomo</td>
<td>Shell beads, salt, obsidian, fish, clams, magnesite beads</td>
</tr>
</tbody>
</table>


**PLAINS MIWOK:**

**18c**

<table>
<thead>
<tr>
<th>Supplied to</th>
<th>Received from</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Miwok</td>
<td>Grass seeds, fish</td>
<td></td>
</tr>
</tbody>
</table>

Received from:

Northern Miwok Digger pine nuts, salt, obsidian, finished arrowheads


**POMO:**

<table>
<thead>
<tr>
<th>Supplied to</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yuki</td>
<td>Hinnites sp. shell beads, clam disc beads, dentalia, moccasins, sea shells, shell beads, dried Haliotis, mussels, seaweed, salt, magnesite beads</td>
</tr>
<tr>
<td>Huchnom</td>
<td>Clam disc beads</td>
</tr>
<tr>
<td>&quot;The North&quot;</td>
<td>Shell beads</td>
</tr>
<tr>
<td>Lake Miwok</td>
<td>Acorns</td>
</tr>
<tr>
<td>Wappo</td>
<td>Tule mats, magnesite beads, sinew-backed bows, fish</td>
</tr>
</tbody>
</table>

Received from:

Northern Miwok Digger pine nuts, salt, obsidian, finished arrowheads

POMO [continued]

Supplied to:

\[ Patwin \]

Coast Yuki

Shell beads, salt, obsidian, fish, clams

Clam disc beads, acorns, fire drills of buckeye wood

Received from:

Yuki

Furs, beads, baskets, skins

"The North" (Yuki?)

Iris fiber cord for deer snares, arrows, sinew-backed bows of yew

Patwin

Sinew-backed bows, yellow hammer headbands, woodpecker scalp belts, cordage for making deer nets

Coast Yuki

Surf fish, abalone, giant chiton, seaweed, mussels, dried kelp for salt, shells of *Hinnites giganteus*


SALINAN: 13b

Supplied to:

Yokuts

Shell beads, whole shells

Received from:

Mainland Chumash

Steatite vessels, columella beads, possibly also steatite and wooden vessels


SERRANO: 21h, k

Supplied to:

Gabrielino

Acorns, deerskins, seed foods

Received from:

Gabrielino

Shell beads, dried fish, sea otter pelts, steatite vessels
References: Kroeber, 1925:630; Strong, 1929:95-96.

SHASTA: 6a

**Supplied to:**

- **Northern Wintun**
  - Deerskins, sugar pine nuts, green pigment, bows, arrowheads, *manzanita* berries, pelts, meat, dentalia, obsidian

- **Yahi**
  - Obsidian

- **Karok**
  - Juniper beads, basketry caps, salt, dentalia, white deer skins, woodpecker scalps, whole *Olivella* shells, large obsidian blades, obsidian, deer skins, sugar pine nuts, wolf skins, horn for spoons

- **Rogue River Athabaskan**
  - Acorn flour

- **Modoc**
  - Bows, dentalia

- **Klamath**
  - Bows, *clam* disc beads, conical burden baskets

- **Yurok**
  - Horn for spoons

- **Achomawí**
  - Dentalia

- **Hupa**
  - Horn for spoons

**Received from:**

- **Northern Wintun**
  - Woodpecker scalps, acorns, baskets, pine nut beads, clam disc beads, deer hides, dried salmon, clams, shell beads

- **Karok**
  - *Haliotis* ornaments, *Haliotis* shells, salt, tobacco seeds, baskets, dentalia, seaweed, pepperwood pods for hair dressing, canoes

- **Rogue River Athabaskan**
  - Dentalia

- **"Warm Springs Indians"**
  - Buckskin shirts and dresses

- **Klamath**
  - Otter skins, other skins and skin blankets, buckskin dresses, men's shirts

- **Yurok**
  - Canoes, acorns, baskets, dentalia, *salt*

11. Modoc?
Received from:

Unspecified tribes  Wooden war clubs with stone or bone insert, grooved stone axes


SINKYONE: 11

Received from:

Wiyot  Beads (dentalia?)


SOUTHERN MAIDU (NISENAN, NISHINAM): 17c

Supplied to:

Washo  Acorns

Patwin  Obsidian, yellow hammer and woodpecker feathers, shell beads

Received from

Paiute  Carrying baskets, seed beaters, winnowing trays  (probably Washo)

Patwin  Shell beads, abalone shells

Northwestern Maidu  Log rafts


SOUTHERN MIWOK: 18f

Supplied to:

Eastern Mono  Clam disc beads

Received from:

Eastern Mono  Rabbit-skin blankets, basketry materials
References: Barrett and Gifford, 1933:256; Merriam, 1955:112

SOUTHERN VALLEY YOKUTS: 20b

Supplied to:

Mainland Chumash Tree, obsidian, salt from salt grass, seed foods, steatite beads, various herbs, vegetables

Tule-Kaweah Yokuts Tule mats, shell beads

"The East" Shell money

Western Mono White paint

Received from:

Mainland Chumash Shell beads, whale pismo clam shells, key-hole limpet shells, Haliotis shells, Olivella shells, sea urchin shells, dried starfish, cowrie shells

Buena Vista Yokuts Asphaltum

Tule-Kaweah Yokuts Steatite, coiled baskets, burden baskets, pottery vessels

Eastern Mono or Koso Mineral salt, obsidian

Salinan Whole shells

Western Mono Salt, sinew-backed bows, stone mortars and pestles

"The East" Fire drills, digging sticks, baskets


TOLOWA: 1b

Supplied to:

Karok Smelt, dentalia

Rogue River Women's basketry caps, eating baskets, trinket baskets

Athabaskans

Received from:

Karok Soaproot, pine nut beads
Supplied to:

Eastern Mono

Mainland Chumash

Yokuts (subgroups not specified)

Kawaiisu

Received from:

Eastern Mono

Mainland Chumash

Yokuts (subgroups not specified)

References:

Received from:

Kings River Yokuts
Clay for pottery, black paint, black sword fern root and redbud bark for basketry

Eastern Mono
Sinew-backed bows, jerked deer meat, rock salt, obsidian, hot rock lifters of wood, piñon nuts, moccasins

Southern Valley Yokuts
Tule mats, shell beads

References:  Latta, 1949: 57ff; Gayton, 1948a: 56.

WAILAKI: lj

Supplied to:

Lassik
Salt, clam disc beads

Karok
Dentalia

Yuki
Whole clam shells, bows

Kato
Dentalia

Received from:

Kato
Baskets, arrows, clothing


WAPPO: 4d

Supplied to:

"Neighboring Groups"
Salt

Received from:

Patwin
Sinew-backed bows

Pomo
Tule mats, fish, magnesite beads, sinew-backed bows

"The North"
Yellow hammer headbands

Coast Miwok
Clams, clam disc beads, clam shells, abalone shells

References:  Barrett, 1952: 114; Driver, 1936: 194; Heizer, 1953: 23f
Supplied to:

Northern **Miwok**

**Salt**

Sierra **Miwok** (sub-group unspecified)

Salt, **piñon** nuts, buff **alo** akin robes, rabbit-skin blankets

Received from:

Northern **Miwok**

Acorns, shell beads, sea shell, baskets

**Northeastern Maidu**

**Papam** bulbs (species not identified)

"The West"

**Redbud** bark for basketry, **soaproot** leaves for brushes

**Eastern Mono**

Kutsavi

Sierra **Miwok** (sub-group unspecified)

Acorns, beads, shells, baskets, manzanita berries

References: Barrett and Gifford, 1933:193,221,224,270; Kroebber, 1925: 571; Barrett, 1917: 14,15,17; Heizer, 1950:39; Riddle11, n.d.

**WESTERN MONO: 21c**

Supplied to:

Eastern **Mono**

Clam disc beads, canes for arrows, acorn meal, fine Yokuts' baskets, tubular clam beads, shell beads, acorns, manzanita berries, squaw berries, elderberries, rabbit-skin blankets

Southern Valley **Yokuts**

Salt, sinew-backed bows, stone mortars and pestles

**Kings River Yokuts**

Sinew-backed bows

**Northern Hill Yokuts**

Rabbit-skin blankets, moccasins, rock salt, red and blue paint, **piñon** nuts

Received from:

Eastern **Mono**

Unfinished obsidian arrowheads, hot rock lifters of wood, sinew-backed bows, tailored sleeveless buckskin jackets, mountain sheep skins, moccasins, fox skin leggings, rock salt, **piñon** nuts, baskets, red paint, white paint, tanned deer skins, kutsavi, pandora moth caterpillars, mineral pigments, pitch-lined basketry water bottles
Northern Hill Yokuts  Acorns, willow bark baskets, shell beads
Southern Valley Yokuts  White paint


**WESTERN MONO-YOKUTS (ENTIMBITCH)**\(^{12}:21c\)

Received from:
Mohave (?)  Pottery


**WIYOT:**3

Supplied to:
Mattole  Dugout canoes, various foods
"Inland"  Olivella shells
Sinkystone  Beads (dentalia?)
Hupa  White deer skins
Yurok  White deer skins

Received from:
Mattole  Tobacco, Haliotis shells, various foods
Yurok  Iris fiber rope


**YAHI:**7d

Received from:
Shasta  Obsidian


\(^{12}\) See Gayton, 1948b:254-55.
YANA: 7b–d

**Supplied to:**

Atsugewi  
Salt, dentalia, buckeye fire drills

Achomawi  
Buckeye fire **drills**, deer hides, buckskin, dentalia, salt

Northern **Wintun**  
Salt

Central **Wintun**  
Baskets

"The North"  
Deer hides, buckskin

**Received from:**

Atsugewi  
Buckskin, arrows, wildcat skin quivers, woodpecker scalps

Achomawi  
Obsidian

Northwestern Maidu  
Clam disc beads

Northern **Wintun**  
Magnesite beads, dentalia

Central **Wintun**  
Clam disc beads, magnesite beads

"The North"  
Barbed obsidian arrowheads

"Unknown"  
Dentalia, clam disc beads,


YUKI: 4a

**Supplied to:**

Pomo  
Furs, beads, baskets, skins

Coast Yuki  
Obsidian

Central **Wintun**  
Black bear skins

**Received from:**

Pomo  
Dentalia, clam disc beads, moccasins, sea shells, shell beads, dried Haliotis flesh, mussels, seaweed, salt, magnesite beads

Huchnom  
Kelp, sea foods, salt, whole clam shells, clam disc beads

Wailaki  
Whole clam shells, bows
Received from:

Central Wintun Salt, obsidian
Coast Yuki Salt, fish
"The North" Dogs


YUMA: 15d

Supplied to:

Diegueño Gourd seeds
Western Yavapai Glass trade beads, dried pumpkin, maize, beans, melons
Cahuilla Gourd rattles
Kamia Tobacco

Received from:

Western Yavapai Rabbit-skin baskets, baskets, buckskin, other skins, mescal, finished skin dresses
Mohave Gourds, eagle feathers
Pima Martynia gods used in basketry
"The Northeast" Buckskin
Diegueño Acorns

References: Gifford, 1931: 49; 1936: 253-54; Curtis, 1924: 15: 25; Spier, 1923: 349; Forde, 1931: 107, 117, 124, 126.

YUROK: 2a

Supplied to:

Hupa Woven pack straps, smelt, redwood dugout canoes, dried sea foods, surf fish, mussels, seaweed, dentalia
Karok Clam shells, pipes, bows, whole Olivella, shells, tobacco seeds, dugout canoes
YUROK [continued]

supplied to:

    Shasta  Redwood dugout canoes, acorns, baskets, salt, dentalia

    Wiyot    Iris fiber rope

Received from:

    Hupa     Inland foods, skins, acorns
    Karok    Dentalia shells
    Chilula  White grass used in basketry
    Shasta  Buckskin, pine nuts, horn for spoons
    Wiyot    White deer skins
    "The South" Haliotis shell ornaments

## APPENDIX

### CORRELATION OF INDIAN TRAILS OF ABORIGINAL CALIFORNIA WITH MODERN THOROUGHFARES

<table>
<thead>
<tr>
<th>Trail Nos. (Map 1)</th>
<th>Modern Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>21, 47, 77</td>
<td><strong>U.S. Hwy.</strong> 101 from the Oregon border south to Loleta; from Longvale south to Windsor; from San Jose south to Gilroy; from Salinas south to Paso Robles; from Gaviota south to Ventura.</td>
</tr>
<tr>
<td>4</td>
<td><strong>State Hwy.</strong> 96 along its entire route, from U.S. 99 west and south to Willow Creek.</td>
</tr>
<tr>
<td>12</td>
<td><strong>U.S. Hwy.</strong> 299 from Willow Creek east and north to the Oregon border.</td>
</tr>
<tr>
<td>5, 102, 63</td>
<td><strong>U.S. Hwy.</strong> 99 from the Oregon border south to Los Angeles,</td>
</tr>
<tr>
<td>103</td>
<td><strong>State Hwy.</strong> 1 from Rockport south to Bodega Bay,</td>
</tr>
<tr>
<td>24</td>
<td><strong>State Hwy.</strong> 20 from Fort Bragg east to Willits; from Ukiah east to Colusa.</td>
</tr>
<tr>
<td>21</td>
<td><strong>State Hwy.</strong> 128 from near Albion southeast to Cloverdale; from Harbin Hot Springs east to Sacramento,</td>
</tr>
<tr>
<td>28</td>
<td><strong>State Hwy.</strong> 29 from Lakeport south to Vallejo.</td>
</tr>
<tr>
<td>29</td>
<td><strong>State Hwy.</strong> 16 from Clear Lake Park southeast to Sacramento.</td>
</tr>
<tr>
<td>27</td>
<td><strong>U.S. Hwy.</strong> 40 from Sacramento northeast to Nevada border.</td>
</tr>
<tr>
<td>30, 102</td>
<td><strong>U.S. Hwy.</strong> 50 from Sacramento east to Nevada border; from Oakland east to Manteca.</td>
</tr>
<tr>
<td>34, 57</td>
<td><strong>State Hwy.</strong> 33 from Tracy south to near Los Banos; from Coalinga south to Taft.</td>
</tr>
<tr>
<td>39</td>
<td><strong>State Hwy.</strong> 152 from Gilroy east to Fairmead.</td>
</tr>
<tr>
<td>48</td>
<td><strong>State Hwy.</strong> 25 from Hollister south to junction with State Hwy. 198, thence east to Coalinga.</td>
</tr>
<tr>
<td>65</td>
<td>Unnumbered road from Santa Margarita east to McKittrick.</td>
</tr>
<tr>
<td>69</td>
<td><strong>State Hwy.</strong> 166 from near Santa Maria east to junction with <strong>U.S. Hwy.</strong> 399.</td>
</tr>
<tr>
<td>Traffic Nos, (Map 1)</td>
<td>Modern Road</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>74</td>
<td>U.S. Hwy. 399 from Ventura northward to junction with U.S. Hwy. 99,</td>
</tr>
<tr>
<td>70</td>
<td>U.S. Hwy. 466 from Bakersfield east to Mohave.</td>
</tr>
<tr>
<td>68, 101</td>
<td>U.S. Hwy. 6 from Mohave north to junction with U.S. Hwy. 395, thence north to Mono Lake.</td>
</tr>
<tr>
<td>64</td>
<td>State Hwy. 178 from Bakersfield east to junction with U.S. Hwy. 6.</td>
</tr>
<tr>
<td>83, 80</td>
<td>U.S. Hwy. 66 from San Bernardino east to Needles</td>
</tr>
<tr>
<td>83, 86, 92</td>
<td>U.S. Hwy. 60 from Los Angeles east to Blythe.</td>
</tr>
<tr>
<td>78</td>
<td>State Hwy. 126 from Ventura east to junction with U.S. Hwy. 99.</td>
</tr>
</tbody>
</table>

The preceding list represents only a small fraction of the number of roads which essentially follow Indian trails, but it is sufficient to illustrate the fact that many of the major modern routes of travel in California probably evolved from aboriginal footpaths as suggested previously in this paper.
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Abbreviations Used

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<td>AA</td>
<td>American Anthropologist</td>
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[Dotted Lines Show Proposed Routes Supported by Evidence in Ethnographic Literature]

**Trail No.**

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12. Sample, loc. cit.; personal survey and site distribution records in the files of the University of California Archaeological Survey.
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Number or number and letter prefix shown before family or group subdivisions correspond with those on Kroeber's (1922) map titled "Native Tribes, Groups, Dialects and Families of California in 1770." Numbers in brackets refer to page where trade relationships of tribe in question are itemized.

**Athabascan Family**

Tolowa Group
- 1b. Tolowa [39]

Hupa Group
- 1c. Hupa [23]
- 1d. Chilula [18]

Mattole Group
- 1f. Mattole [28]

Wailaki Group
- 1g. Nongatl [31]
- 1h. Lassik [27]
- 1i. Sinkyone [38]
- 1j. Wailaki [41]
- 1k. Kato [25]

**Algonkin Family**

Yurok Group
- 2a. Yurok [45]
- 3. Wiyot [43]

**Yukian Family**

- 4a. Yuki [44]
- 4b. Huchnom [23]
- 4c. Coast Yuki [19]
- 4d. Wapgo [41]

**Lutuamian Family**

- 5. Modoc [29]

**Hokan Family**

Shastan
- 6a. Shasta [37]
- 6b. New River Shasta [30]
- 6c. Konomihu [26]
- 6e. Achomawi (Pit River) [15]
- 6f. Atsugewd (Hat Creek) [16]
Hokan Family [continued]

Yana
7b. Central Yana (Noze) [44]
7c. Southern Yana [44]
7d. Yahi [43, 44]
9. Chimariko [18]

Pomo
10a. Northern [35]
10b. Central [35]
10c. Eastern [35]
10d. Southeastern [35]
10e. Northeastern [35]
10f. Southern [35]
10g. Southwestern [35]
11. Washo [42]

Salinan
13b. Migueleño [36]

Chumash
14a. Obispeño [28]
14d. Barbareño [28]
14f. Emigdiano [28]
14g. Interior (doubtful)
14h. Island [24]

Yuman
15b. Southern (Eastern) Diegueño [20]
15c. Kamia [24]
15d. Yuma [45]
15e. Halchidhoma (now Chemehuevi) [22]
15f. Mohave [29]

Penutian Family

Wintun (Dialect Groups)
16a. Northern [33]
16b. Central (Nolmlaki) [17]
16d. Southwestern (Patwin) [34]

Maidu (Dialect Groups)
17a. Northeastern [31]
17b. Northwestern [34]
17c. Southern (Nisenan) [38]
Penutian Family [continued]

Miwok
18a. Coast [18]
18b. Lake [27]
18c. Plains [35]
18d. Northern [32]
18e. Central [17]
18f. Southern [38]

Costanoan
19c. Santa Clara [19]
19f. Monterey (Rumsen) [19]

Yokuts (Dialect Groups)
20a. Northern Valley (Chulamni, Chauchila, etc.) [33]
20b. Southern Valley (Tachi, Yauelmani, etc.) [39]
20c. Northern Hill (Chukchansi, etc.) [31]
20d. Kings River (Choinimni, etc.) [26]
20e. Tule-Kaweah (Yaudanchi, etc.) [40]
20g. Buena Vista (Tulamni, etc.) [16]

Uto-Aztekan (Shoshonean) Family

Plateau Branch

Mono-Bannock Group
21a. Northern Paiute (Paviotso) [32]
21b. Northern Paiute (Owens Valley) [20]
21c. Western Mono [42,43]

Shoshoni-Comanche Group
21d. Koso (Panamint Shoshone) [27]

Ute-Chemehuevi (Southern Paiute)
21e. Chemehuevi (Southern Paiute) [18]
21f. Kawaiisu (Tehachapi) [26]

Kern River Branch
21g. Tubatulabal (and Bankalachi) [40]

Southern California Branch

Serrano Group
21h. Kitanemuk (Tejon) [26]
21k. Serrano [36]

Gabrielino Group
21m. Gabrielino [22]

Luiseño-Cahuilla Group
21t. Desert Cahuilla [17]
MAP

INDIAN TRAILS OF
ABORIGINAL CALIFORNIA

SCALE
MAP 2. Trade Relations in Aboriginal California