

**THE POPULATION OF
THE CALIFORNIA INDIANS
1769-1970**

SHERBURNE F. COOK

With a foreword by
WOODROW BORAH and ROBERT F. HEIZER

**UNIVERSITY OF CALIFORNIA PRESS
BERKELEY • LOS ANGELES • LONDON**

SAUSALITO PUBLIC LIBRARY

The two results, 5,955 and 5,870 are very close, probably spuriously so. The methods used obviously involve considerable error, at least plus or minus five to ten percent. However, they agree in principle, and we may conclude that the Shasta had a population of 5,900, give or take 500 persons. If we add 3,000 for the Pit Rivers and 700 for the Modoc, the pre-contact population of northeastern California would have been approximately 9,600.

The Sacramento Valley province includes two sharply defined types of habitat. In the center we find the flat valley floor with two large rivers, the Sacramento and the Feather, along which Indian villages were strung like beads on a chain. There were few tributaries except Putah Creek and Cache Creek on the west and the American and Yuba Rivers on the east. Between these streams the arid plain extended uninhabited. The periphery is hilly or mountainous. The Coast Ranges, the rough country in Trinity and Siskiyou Counties, and the Sierra Nevada foothills ring the valley on three sides. There are numerous small streams, most of which saw planted on their banks villages of the type found among the Shasta and Achomawi, but frequently larger. In considering population it will be convenient to treat these habitats separately. This is particularly desirable because somewhat different methods have to be employed in the two cases.

The southernmost extension of the Sacramento Valley was occupied by a group which Kroeber (1932) called the Southern *Patwin*. It extends from Putah Creek to the Delta, Suisin, and San Pablo Bays and includes the lower few miles of the Napa River. There has been no detailed survey of living centers south and southwest of Putah Creek. A few villages may be assigned to this territory, but as Kroeber points out they are likely to have been the capitals of tribelets, from which they take their name.

One element which has almost nullified the efforts of ethnographers is the fact that the Southern *Patwin* were swept into the missions as early as 1810, long before the memory of modern informants. As a result, our principal source of information lies in the mission records.

These records are discussed in detail in connection with the Costanoans and other linguistic groups further south. Those which are pertinent here are three in number. First is the baptism book of the Mission San Francisco Solano, preserved in the Bancroft Library at Berkeley. The second and third are the copies of the mission books of San Francisco de Asis and San José made by Alphonse L. Pinart for H. H. Bancroft and also to be found in the Bancroft Library. In all three

documents the village of origin is given for each gentile baptized, and the Pinart copies, although they have been criticized for inaccuracy, are sufficiently reliable for the present purpose. It is possible to allocate many of the village names to the appropriate linguistic stock, and thereby arrive at an approximation to the number of Southern *Patwin* natives who were baptized in the three missions. In addition there are roughly 700 baptisms of Indians from villages some of whose names are clearly, some only possibly, of *Patwin* origin.

There are four large villages, or tribelets as Kroeber would have called them, the names of which very frequently recur: the Suisunes, the Libaytos, the Canicaymos, and the Ululatos, the respective baptisms from which were 231, 217, 233, and 572. To these may be added the Napa, who may not have been entirely *Patwin*, but for whom are recorded 193 baptisms. The mean is 289. If we allow one half of the doubtful *Patwin* villages, or 350 souls, we get a total of close to 1,800.

Unlike the territory of the Costanoans and Salinans, missionization in this area was marginal. Mission Dolores did not reach northeast of the bay until 1810; San Francisco Solano not until after 1820. In the meantime proselyting effort declined and the missions were secularized in 1833-1834. As a result many natives escaped conversion. It is probable that not more than one third of the aboriginal number were recorded as baptized. Consequently we may double or triple the number of converts and count the pre-mission population as in the vicinity of 5,000.

This value receives indirect confirmation from two sources. The first is the diary of the expedition by Capt. Luis Arguello in 1821. A copy of this diary, kept by Fr. Blas Ordaz, is in the Bancroft Library (Santa Barbara Archive, Vol. IV, 161-190) and was published as a translation into English by Heizer and Hester (1970b). On Oct. 23, 1821, the party reached the rancharia of the Ululatos (near Vacaville). The Father was "astonished at the small number of gentiles" found there—only 30. The remainder had fled because of a local war. His astonishment implies the expectation of finding at least a few hundred souls. On the same day the rancharia of the Libaytos, on Putah Creek, was reached. There were only 50 Indians, the rest being away to gather seeds. However, "according to the houses" which the Spaniards could easily count, there might have been 400 persons. The recorded baptisms of the Ululatos and Libaytos were about 450. If the population of the two rancharias was near 1,000, as is indicated by the remarks of Father Ordaz, it was more than twice the number of conversions.

The second source of confirmation is the population density. Although it is true that the environment as well as the settlement pattern found for the *Patwin* is quite different from that which characterizes the Miwok, Pomo, and Yuki of the coast ranges, the probable densities might be more or less comparable. When the areas are measured on Kroeber's tribal map (1925), and when the populations are taken from Cook (1956), the results are: for the Yuki plus the northeastern Pomo, 5.3 persons per square mile; for the remainder of the Pomo, 6.4; for the Wappo plus Coast and Lake Miwok, 4.3. The *Patwin*, south of Putah Creek, had 1,130 square miles and 5,000 souls. The density, 4.4, is close to the range of the groups which border on the west. We may also compare the area to the east and south. According to the data given by Cook (1955a), the Delta, together with the lower courses of the Cosumnes, Mokelumne, Calaveras, Stanislaus, and Tuolumne Rivers, had an aggregate area of 3,200 square miles and supported a population of 27,070. The density would have been 8.4 persons per square mile, probably the highest in California. The density to the north and west of the lower Sacramento would be expected to fall far short of this value, although perhaps it might not be less than one half. On the whole, therefore, if we can rely upon density calculations, a population estimate of 5,000 for the southern *Patwin* is reasonable.

The main axis of the Sacramento Valley embraces a territory which runs from Putah Creek northward to Cottonwood Creek and then southward along the foot of the Sierra Nevada to the American River. The native linguistic stocks who lived here were, according to Kroeber's division (1932), the southern *Patwin* (those above Putah Creek), the Valley Nisenan, the River *Patwin*, the Valley Maidu, and the River Wintun. The Sacramento River between the city and Red Bluff, with the Feather River from Knight's Landing to Oroville, lie in the flat valley floor and constitute a sharply defined ecological province, which, with respect to human habitation, is dominated by the two wide rivers flowing through it. Their banks were studded with a series of villages that held almost the entire population of the region.

Some idea of the size of these rancherias can be obtained from the writings of men who saw them before their destruction by disease and the invasion of the whites. Father Blas Ordaz, in describing the expedition of Arguello, gives the number of inhabitants of several

villages. One has already been mentioned—the rancheria of the Libaytos, with an estimated 400 souls. Then comes Ehita, not cited by either Kroeber or Merriam, on Cache Creek somewhere near Madison, with 900 souls according to the houses. Next is Goroy, apparently on the Sacramento near Grimes, with 1,000. Higher up the river was Guiribay with 1,600. About a mile or two south of Princeton was Cha, said to be the second largest *Patwin* village after Coru. These are called Chah-de-ha and Koroo by Merriam in Heizer and Hester, (1970:83). According to Ordaz, there were 400-500 children up to 14 years of age at Cha, with 1,000 older people, for a total of 1,400. Father Ordaz does not give a population for Coru, but if it was larger than Cha it must have held at least 1,500 persons. Thus, if we omit the Libaytos, who may already have been decimated by the Spaniards, there are five River *Patwin* villages with an average of 1,280 inhabitants.

Certain points should be kept in mind with respect to the Arguello account. Only the largest villages are mentioned by name, and probably they were the only ones to receive serious attention. It is impossible to say with precision how much smaller the many unmentioned villages were. However, few would have had less than 200 inhabitants, and many would have had several hundred. If we include the largest, the average size was probably of the order of 500 persons.

Further testimony comes from numerous later writers, but the only one who saw the Sacramento Valley himself, prior to 1834, was John Work, who described his trip south from Oregon in his journal (published by Alice Bay Maloney in 1945). In early January 1833, Work was on the lower Feather River, where, in a "short" day's journey, he passed or contacted seven Indian villages. "The inhabitants of each must amount to some hundreds" (1945:25). A few days later he counted 28 houses in one village and 40-50 houses in each of four others. This would mean an average of 300-400 persons in each. Apart from Work's journal, we find much hearsay, or second-hand evidence from explorers and travelers who visited the area between 1835 and 1845, to the effect that most native villages did contain or had contained from several hundred to over one thousand inhabitants. The unanimity of opinion is startling, for there seems to be not a single dissenting voice. Moreover, wholesale exaggeration or prevarication is extremely unlikely in the complete absence of any motive for such

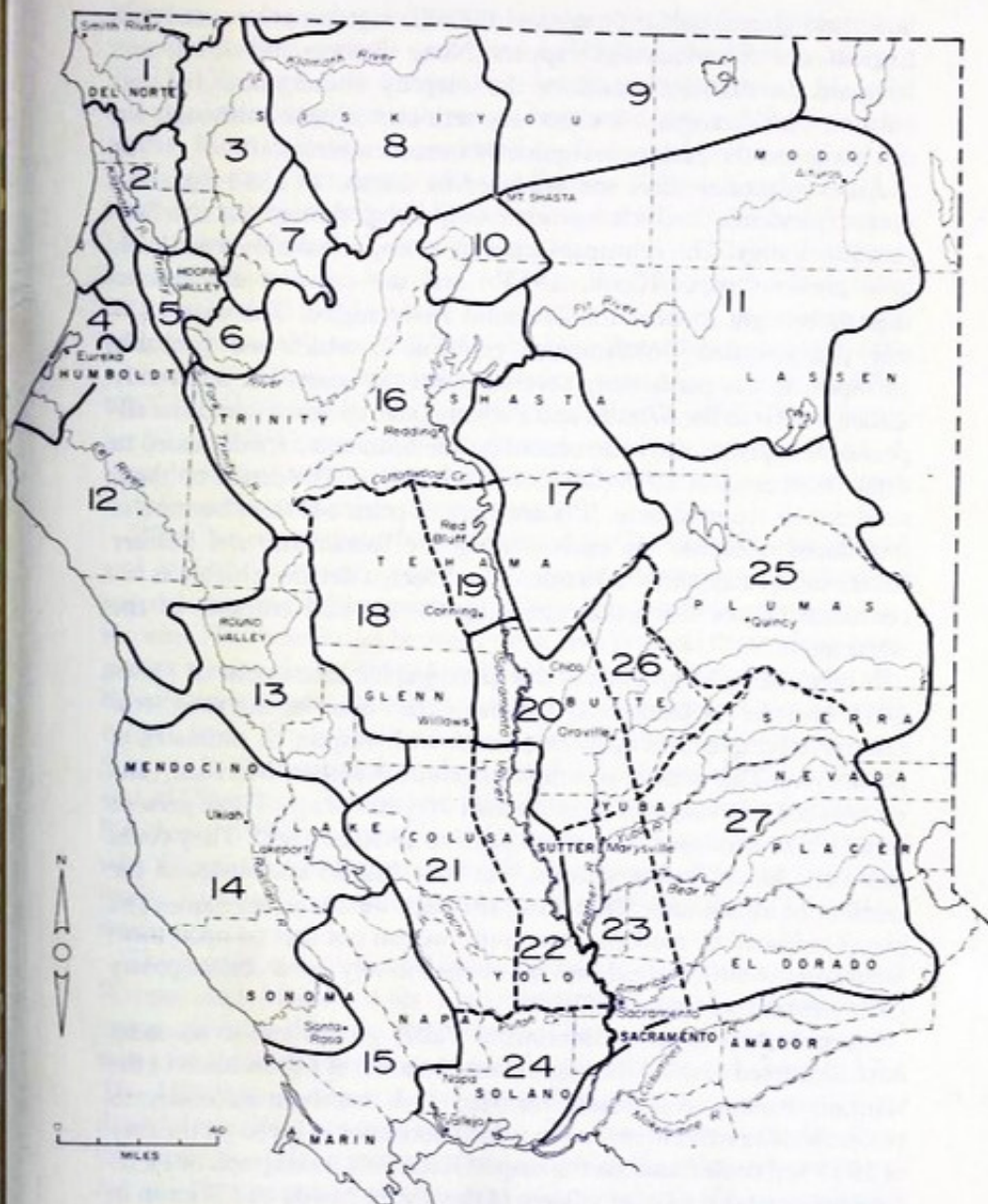
behavior. There can be little doubt, therefore, that an average of 500 is reasonable and even conservative.

Subsequent to 1833, and particularly in the years just preceding and following the discovery of gold, numerous counts and estimates of the Indian population in the Sacramento Valley were made by settlers and by government officials. Several of these are reproduced by Heizer and Hester (1970 a and b). Many more are cited by Cook (1943b: table 1 and notes). Here all of them must be ignored, for none of them gives a true picture of aboriginal populations. The change had been enormous since 1833.

During the years 1810 to 1845 there were repeated incursions into the lower Sacramento Valley by Spaniards and Mexicans, and these began the process of demoralization and disturbance of native society. In this activity they were assisted by the earliest settlers and holders of

Map 1. California north of the latitude of San Francisco Bay, and in particular the Sacramento Valley. The lighter lines delineate the counties. The heavy lines indicate the tribal divisions of the Indians, as discussed in the text, or as modified from Kroeber (1925, 1932). The boundaries cannot be and are not intended to be strictly accurate, but the error involved does not exceed a few percent. The broken lines represent the approximate boundaries of subdivisions within the main tribal entities, such as the Wintun or Maidu. The names of the counties are displayed on the map, but the tribal divisions are designated by numbers for a key to which reference is made to the list below. A few of the principal towns are shown for the purpose of orientation.

- | | |
|---|-------------------------------|
| 1. Tolowa | 14. Pomo |
| 2. Yurok | 15. Wappo and Coast Miwok |
| 3. Karok | 16. Northern Wintun, or Wintu |
| 4. Wiyot | 17. Yana and Yahi |
| 5. Hupa | 18. Hill Wintun |
| 6. Chimariko | 19. Valley, or River Wintun |
| 7. New River Shasta | 20. Valley, or River Maidu |
| 8. Shasta | 21. Hill Patwin |
| 9. Modoc | 22. Valley, or River Patwin |
| 10. Okwanuchu | 23. Valley Nisenan |
| 11. Achomawi and Atsugewi
(Pit Rivers) | 24. Southern Patwin |
| 12. Athabascans | 25. Northeastern Maidu |
| 13. Yuki | 26. Hill Maidu |
| | 27. Hill Nisenan |



large land grants such as Sutter and Bidwell, together with occasional English and American fur trappers. None of these individuals entertained the slightest regard for the integrity of indigenous life and custom. The demographic effect was seriously adverse, although we can not assess the damage in rigorously numerical terms.

An even greater effect was produced by disease. In 1833 came the great "pandemic" which was extremely lethal throughout the Sacramento Valley. The principal facts concerning it have been set forth in a previous paper (Cook, 1955b) and the cause is ascribed to malaria brought in from the Columbia River region. The year 1837 saw the so-called "Miramontes epidemic", which was probably smallpox. It was particularly severe toward the coast, but apparently spilled over into the Wintun and *Patwin*. Later epidemics, and the all-pervasive syphilis, early introduced by the Spaniards, are discussed in detail in an essay of 1943 (Cook, 1943a: 11-12). The details on these need not be repeated here. It is adequate to point out that, because of introduced maladies, the natives along the Sacramento and Feather Rivers suffered extreme reduction in numbers, a decline which was accentuated by the disruption attending the physical entrance of the white man.

It is necessary to emphasize this demographic catastrophe of 1830-1845 in order to justify the statement that none of the twentieth-century ethnographers is to be trusted with respect to estimates of population. The reason is simple. Barrett, Kroeber, Merriam, and others used informants of no more than 70 years of age. These persons could not remember events much prior to 1850 or 1860. They could name and locate former villages, but they had no knowledge of the number of inhabitants. Therefore, although we can accept names and places indicated by modern informants, we can not depend upon them for reports of size. Instead, we are obliged to rely upon contemporary observers such as Ordaz and Work.

We now turn to other Sacramento Valley groups and in so doing have attempted to show the approximate location of the divisions of the Wintun, *Patwin*, and Maidu on Map 1. It has been necessary to reconcile differences between the tribal boundaries as given on the map of 1925 and those found on the map to Kroeber's monograph of 1932. Kroeber compiled a list of villages of the Valley Maidu and Wintun in the Handbook (1925). He later revised this list for his special essays on the Valley Nisenan (1929) and the *Patwin* (1932). Meanwhile

Merriam, using other informants, had accumulated a different list which was only recently published by Heizer and Hester (1970a: 79-93). The two lists overlap but do not coincide exactly, largely because informants remembered or had heard about different settlements. Merriam's list, as presented by Heizer and Hester, gives 77 places on the Sacramento and the Feather Rivers. Kroeber (1932) mentions approximately 50. By examining both lists, and by following Heizer and Hester's reconciliation, we get 17 villages listed by Kroeber but not by Merriam, 47 listed by Merriam but not by Kroeber, and 30 listed by both. The total is 94 places, the existence of which is reasonably assured. If the aboriginal inhabitants averaged 500 persons per village, the total population would have been 47,000. When we add 5,000 for the partially missionized Southern *Patwin*, we get 52,000. If the average of 500 persons per village seems too high, it should be borne in mind that the Kroeber-Merriam lists do not contain all the rancherias in existence prior to 1830.

When we consider the hill divisions of the *Patwin*, Wintun, Yana, and Maidu, we revert again to area-density determinations, but we support this method by means of village lists provided principally by Kroeber. The boundaries between these divisions and those of the river groups are not clearly defined on Kroeber's maps. Hence the areas can be only approximate. The Hill *Patwin* extended along the inner coast ranges from Putah Creek north to the sources of Stony Creek near Stonyford. The western boundary met the Pomo and the Lake Miwok east of Clear Lake. The eastern boundary was vague, but according to Kroeber's (1932) map it may be taken as a line connecting Winters with Dunnigan and thence continuing northward along the Southern Pacific Railway. This territory embraces somewhere near 1,600 square miles.

The density may be judged by comparison with the adjacent Pomo, Wappo, and Miwok. Area measurement, as has previously been stated, gives for the Yuki and Northeast Pomo 5.3 persons per square mile, for the Pomo proper 6.4, and for the Miwok and Wappo 4.3. The Hill *Patwin* cannot have exceeded the last value. Indeed, it is doubtful whether they even reached it. The reason lies in the fact that this group lived along narrow stream valleys in the relatively arid coast ranges. They possessed no lake front and no wide, fertile bottom lands such as characterized the Russian River system or the upper Napa Valley. The open land on the west side of the Sacramento Valley

yielded little subsistence and was virtually uninhabited. Hence we can assign a maximum of no more than three persons per square mile. With 1,000 square miles this would mean a population of 4,800.

Kroeber (1932) lists 19 names of settlements for the Hill *Patwin*. However, he makes it very clear that these denote tribelets, or small, independent units of the linguistic stock as a whole. Each name also extends to the principal village of the tribelet, and thus, demographically applies to the people who live there plus any others who might be scattered in the vicinity. It is in this sense that we must use his list for the Hill *Patwin* and the Hill Wintun. With regard to the average number of persons per settlement (or tribelet), Kroeber thinks 100 is adequate. On the other hand, a thorough study of the more coastal tribes (Cook, 1956) shows that for them 200 is far more likely, with a distinct possibility of a higher value. Since the Hill *Patwin* resemble the Pomo and Wappo in many other respects, we may consider 200 to be a fair average value. The total then becomes 3,800.

The two estimates differ by 1,000 persons. However, the figure based upon villages is probably the more accurate. We shall therefore set the value at 4,000 and the density consequently at 2.5 persons per square mile.

The Hill Wintun extended northward of the Hill *Patwin* as far as the middle fork of Cottonwood Creek. To the west they fronted on the Yuki. To the east they reached the Southern Pacific Railway as far north as Kirkwood, just south of Corning. At this point they merged with the small group, the Valley Wintun, which according to Kroeber's account, held the Sacramento River from below Corning to several miles above Red Bluff. We are actually dealing, therefore, with two divisions of the Wintun. The strictly hill division occupied a large expanse of hill country which reached west as far as the headwaters of the Trinity and Eel Rivers. Their habitat and their settlement pattern resembled that of the Hill *Patwin*, whereas the River Wintun represented a northward extension of the River Maidu.

The density of the Hill Wintun was probably less than that of the Hill *Patwin* to the south and of the Yuki to the west. If we say 2.0 persons per square mile the estimate will be liberal. This would mean for approximately 1,950 square miles 3,900 persons. Kroeber found ten tribelets or settlements which appeared authentic. At 200 per tribelet the total population would be 2,000. However, there were several doubtful cases mentioned by informants which Kroeber rejected but

which may have indicated some type of occupation. Furthermore, the territory was exposed to epidemics in the 1830s and was overrun by miners in the 1850s. It is likely, therefore, that the original number of tribelets was greater than ten. As a compromise, we may set the population at 3,000.

The River Wintun area covers not much more than 500 square miles. Kroeber's principal informants located five settlements, which may have been tribelets, all below Red Bluff. For the Valley Maidu and the River *Patwin* we used an average of 500 persons per village. The River Wintun were probably not quite so numerous. At 400 each the population would have been 2,000, and at 300 each it would have been 1,500. It is of interest that another informant who had lived most of his life in the valley near Chico mentioned four areas along the river which were Wintun tribelets. Again we get somewhere near 1,500. The entire region, Hill Wintun and River Wintun, would thus have contained 4,500 souls.

The group called by Kroeber in 1925 the Northern Wintun are also known on linguistic grounds as Wintu, or as the Trinity Wintu. They held the territory north of Cottonwood Creek, on the upper Trinity River and east to the Sacramento. As outlined on Kroeber's tribal map (1925) they covered about 3,550 square miles. There are no village lists available, and very little modern knowledge of any kind. The social organization was effectively destroyed by the miners in the 1850s. Consequently we are forced to almost an outright guess with respect to aboriginal population.

The habitat, along the headwaters of the Trinity and Sacramento Rivers, consisted of narrow stream canyons among high hills or mountains. The villages must have been of moderate size and number, perhaps resembling those of the Karok and western Shasta. We used a density of 2.4 for the Karok and 1.7 for the Shasta. Farther south the density of the Hill *Patwin* was estimated at 2.5 and of the Hill Wintun about 1.6 persons per square mile. The area of the Wintu must have been more sparsely inhabited than that of the groups which approached the open Sacramento Valley, and also of that held by the Shasta. Hence a value of 1.5 persons per square mile will not be excessive. The population may be put at 5,325, or, after rounding off, 5,300.

Similar considerations apply to the Yana and Yahi, who inhabited the broken lava country along the eastern affluents of the Sacramento from Chico north to the Pit River. The terrain was very inhospitable

and even today is thinly settled. Environmentally the closest Indian stocks were the western Achomawi and the Okwanuchu. Since there are no village records and since the Yana and Yahi are extinct, the only basis for a population estimate is that of density. The Okwanuchu were assigned a density of 1.2 persons per square mile, and the western Achomawi one of 0.7. We may take the approximate median, 0.9. There were 2,035 square miles, hence the population estimate would be 1,830 persons, or, let us say 1,850.

With the Northeastern, or Mountain Maidu we again encounter data derived from villages. This division of the Maidu inhabited the headwaters of the North and Middle Forks of the Feather River, and extended north to Mt. Lassen and Susanville. To the east they reached the crest of the Sierra Nevada as far south as Sierraville. The settlements, however, were concentrated at and to the north of Quincy, leaving great tracts of land uninhabited.

Kroeber (1925) lists seven settlements, at the same time carefully explaining that these are actually territorial divisions, each one of which comprised several local hamlets or villages. He lists six places for the settlement at Quincy, called Silo-ng-koyo (1925:397), and three for Tasi-koyo in Indian Valley (p. 398). He also shows the number of houses. In Silo there were 18-23, or an average of 3.5 per hamlet; in Tasi there were 20-22, or an average of 7 per hamlet. If there were seven settlements, or tribelets, with an average of 20 houses each, the total houses would have been 140. Kroeber thinks the number of persons per house would have been between 5 and 10, and mentions the Yurok number of 7.5. Since these were single family dwellings, the Yurok number is applicable. The population then would have reached 1,050, with an average tribelet size of 150. The area was measured on Kroeber's maps and found to be 3,530 square miles. The density therefore was 0.34 persons per square mile. This is substantially the same value as was derived for the Modoc and eastern Achomawi, who lived in much the same type of country. If the value seems very low for the Northeastern Maidu, who were localized in the broad valleys of central Plumas County, it must be remembered that their entire living space included much high mountain and desert terrain. At any rate there is no evidence now available which would justify increasing the estimated population.

Two of Kroeber's original groups of Maidu were called the North-western and the Southern. From these he later established four

branches, which he designated the Hill and the Valley Maidu, and the Hill and the Valley Nisenan. The valley divisions we have already included among the river inhabitants. We have left, therefore, the two divisions who lived in the foothill region and controlled the land to the crest of the high Sierra Nevada.

We first consult the village lists of Kroeber, and in so doing we consolidate the Hill Maidu and the Hill Nisenan into a single entity. Upstream from a line drawn five or ten miles east of Oroville, Marysville, and Sacramento, Kroeber gives the number of villages on the various river systems in the accompanying table.

Feather River	11
Honcut Creek	2
Yuba River	6
Bear River	1
American River	12
Cosumnes River, North Fork	5
Total	37

With regard to the size and importance of these places, Kroeber (1925:393) says: "In some regions minor villages have been included, in other tracts even the major towns have not been recorded." The 37 names therefore probably represent an intermediate magnitude. For the Northeastern Maidu, an average of 150 persons per settlement was assumed. In view of Kroeber's uncertainty, and because the larger villages were more apt to be remembered by informants, we may raise this value to 200. The population of the foothill strip would then reach 7,400.

An area-density calculation may be attempted. Simply for the purpose of making a check of consistency we may delineate an area bounded on the west by the border between the Hill and the Valley tribes, and on the east by the limit of Kroeber's village sites. The northern and southern boundaries are respectively Chico Creek and the North Fork of the Cosumnes. The high mountains are thus excluded. Very approximately, the area contains 2,800 square miles. With a population of 7,400, the density is 2.65 persons per square mile, a value not unreasonable in view of the densities found in similar hilly regions elsewhere.

Another possible check is by means of the distribution of population along streams, particularly since most of the Maidu lived on the banks of rivers. A basis for comparison is the set of calculations made by Baumhoff (1963), who has computed "fish-miles" for many of the North Coast and San Joaquin Valley tribes. By fish-mile he means a mile of river from which fish can be taken in significant amounts. The main streams in the Hill Maidu area were all plentifully stocked with fish, although the minor affluents can be ignored as a source of supply. Hence direct measurements of the primary streams yield stream lengths which are comparable with the aggregate fish-miles of Baumhoff. For population he uses the values given by Cook (1955a, 1956). Some of his results can be listed in the accompanying table.

<i>Stream or tribe</i>	<i>miles</i>	<i>persons per river mile</i>
Lower Merced	32	55
Middle Kings	75	67
Lower Kings	20	75
Plains Miwok	252	57
Central Miwok	88	24
Southern Miwok	60	45
Average:		54

In the Hill Maidu territory there are three substantial river systems, those of the American, the Yuba, and the Feather. For these the approximate mileages, together with the population estimated from village counts, are given in the accompanying table.

<i>Stream</i>	<i>Miles</i>	<i>Population</i>	<i>Persons per river mile</i>
American River	60	2,400	40
Yuba River	60	1,200	20
Feather River	70	2,200	31
Average:			30

Although the values for the Maidu fall below those of the Yokuts on the Merced and the Kings River, they are not materially different from those of the Central and Southern Miwok. The consistency is reasonable, particularly when we consider the wide limits of error imposed by such a crude method. It appears, therefore, that the number 7,400 is not far wrong for the population of the Hill Maidu and the Hill Nisenan.

We can now put together the pieces and assemble the most probable aboriginal population of the Sacramento Valley and adjacent foothills. We compose the list according to the secondary linguistic divisions.

Southern Patwin, missionized	5,000
Southern Patwin, non-missionized	
Valley Nisenan	
River Patwin	
Valley Maidu	47,000
Hill Patwin	4,000
Hill Wintun	3,000
River Wintun	1,500
Northern Wintun or Wintu	5,300
Yana and Yahi	1,850
Northeastern Maidu	1,050
Hill Maidu	
Hill Nisenan	7,400
Total for the province	76,100

In concluding this portion of the present essay, it is of interest to compare the population of the two great valleys of California, the San Joaquin and the Sacramento. In the San Joaquin, a study by the writer (Cook, 1955a) found 83,800 natives living on 33,400 square miles, or 2.51 persons per square mile. In the Sacramento, the present calculation indicates 76,100 on 22,700 square miles, or 3.35 persons per square mile. If we add the thinly populated northern tier of tribes, 9,600 people living on close to 12,800 square miles, we get for the entire northern interior 85,700 persons and 35,500 square miles. The density is 2.41 persons per square mile. The two regions are therefore remarkably similar in demographic character.