PUVUNGA: A REVIEW OF THE ETHNOHISTORIC, ARCHAEOLOGICAL, AND ETHNOGRAPHIC ISSUES SURROUNDING A GABRIELINO RANCHERIA NEAR ALAMITOS BAY, LOS ANGELES COUNTY, CALIFORNIA

DRAFT

Report prepared for

Calfornia State University Long Beach Foundation
1250 Bellflower Blvd.
Long Beach, CA 90804-0119

Compiled by

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Contributions by

Michael Baksh
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David D. Earle
Donn R. Grenda
William McCawley

STATISTICAL RESEARCH
Technical Series
Tucson, Arizona

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INTRODUCTION

Jeffrey H. Altschul

Puvunga was a Gabrielino rancheria located in the Alamitos Bay region (Figure 1.1). At the time of Spanish contact it was a thriving community. In addition to secular activities, *Puvunga* was associated with specific dieties and events sacred to the Gabrielino. There are stories that tell of the monster chief *Ouiot* and the supreme creator-god *Chingichnich* both coming from *Puvunga*. In 1805 the last recorded baptism of an individual from the Gabrielino rancheria of *Puvunga* took place at Mission San Gabriel. After this event, the record is silent and it is presumed that *Puvunga* was abandoned shortly thereafter.

Prior to its abandonment, little was actually recorded about *Puvunga*. Its location was never recorded, and details, such as its size and spatial layout, remain unknown. During the nineteenth century, only a few references were made to the rancheria. Father Boscana mentions *Puvunga* in his study of *Chingichnich* and Hugo Reid lists it as a principal Gabrielino settlement in his letters to the *Los Angeles Star*.

It was not until the twentieth century that anthropologists took an interest in *Puvunga*. In his study of California native religions, J.P. Harrington became quite interested in *Chingichnich* which led him to *Puvunga*. On two occasions in the late 1920s, Harrington, in the company of Native American informants and knowledgeable Euroamericans, visited what he thought was *Puvunga*. He even took photographs and made a drawing of the site, which was located on the Bixby Ranch. Until the 1970s, no one questioned Harrington's identification. At that time, Keith Dixon, a professor of anthropology at CSULB with considerable experience of Long Beach archaeology, suggested an alternative hypothesis. In addition to the site identified by Harrington, Dixon suggested that other archaeological sites in the Signal Hill region could be former locations of *Puvunga*. In 1974, two sites were listed on the National Register of Historic Places: one was the Bixby Rach site (CA-LAN-306) identified by Harrington and the other was an archaeological site located on the CSULB campus known by its trinomial designation, CA-LAN-234/235. The two sites qualified for the National Register in part because of their possible association with the ethnohistoric community of *Puvunga* and in part because of their scientific significance as archaeological sites. Neither site was in pristine condition. The Bixby Ranch site had been disturbed by numerous historic episodes dating back to the nineteenth century. Portions of CA-LAN-234/235 were under roads and buildings associated with the CSULB campus and the Veterans Hospital. In addition, an organic garden was placed on top of the midden in 1972 as part of an Earthday celebration which continued in use until 1993.

Throughout the latter part of the 1970s and 1980s, portions of CA-LAN-234/235 were developed. A Japanese Garden and a sewer outfall were placed in the north and a parking lot in the south part of the site after archaeologists concluded that no significant deposits would be disturbed. In the early 1990s, CSULB officials began plans to develop the remainder of the Bellflower property (Figure 1.2). As these plans evolved, several propositions were put forth. In the latter part of 1992, the CSULB administration suggested placing a parking lot over the archaeological site. Vera Rocha, Chief of the Gabrielino-Shoshone Nation, sent a letter to the administration in January 1993, protesting the plans. She was particularly concerned that the project would impact CA-LAN-234/235, the site of *Puvunga*. A hearing on the subject took place March 12, 1993. The CSULB administration promised the Native American Hertiage Commission that the parking lot would not be constructed and that a "cultural review" would be conducted.

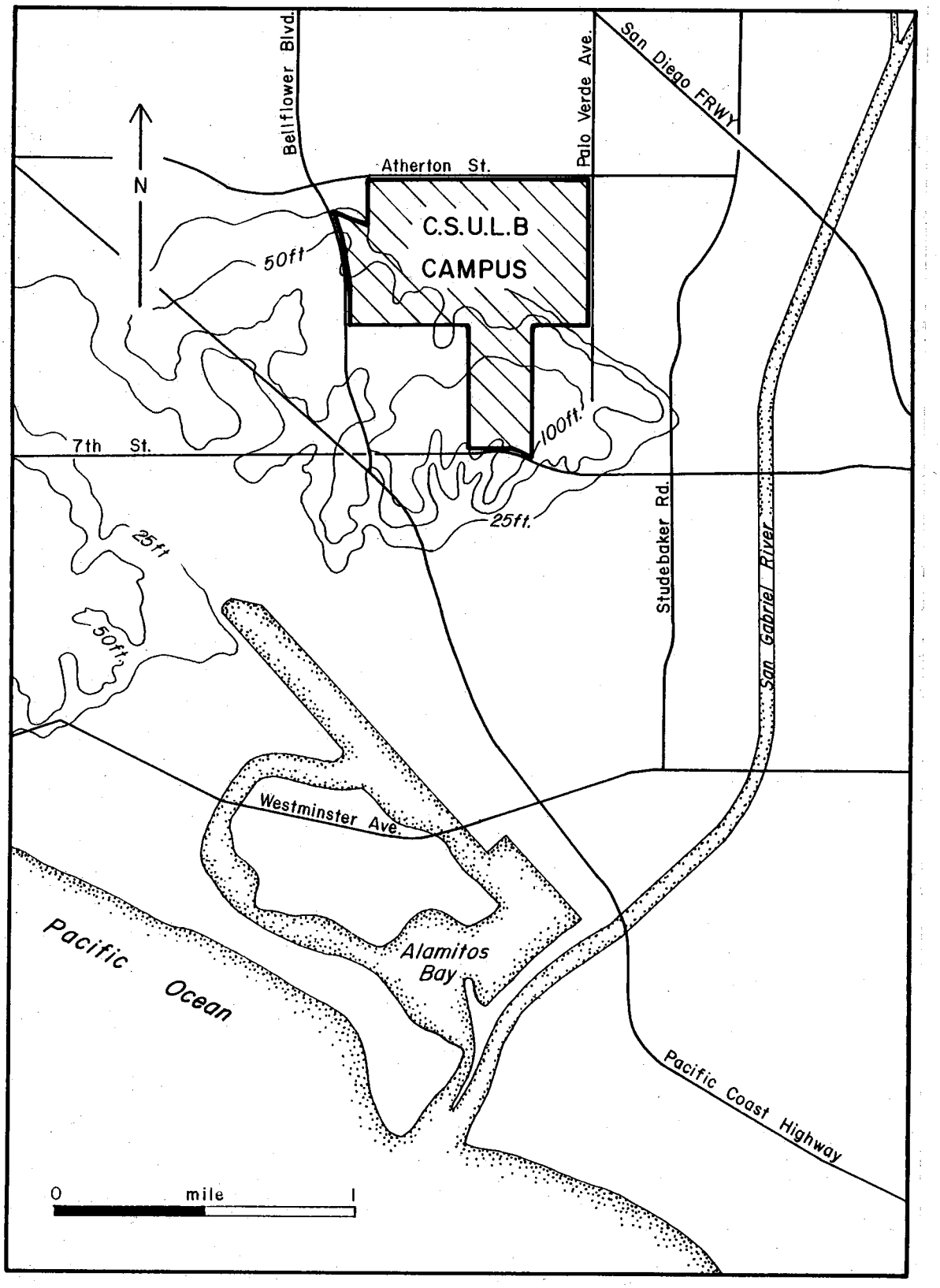

Figure 1.1. Alamitos Bay Region and CSULB campus.

This review has two goals. First, a campus wide research design for dealing with archaeological sites is to be developed. This design is being developed by Mark Raab and Matthew Boxt. Several drafts have appeared and over the course of its development the orientation has shifted from a strict archaeological research design to a management plan. The second goal of the cultural review is to evaluate the general significance of the Bellflower property.

To this end, CSULB developed a scope-of-work and requested proposals from a number of cultural resource management firms. As part of its proposal, Statistical Research, Inc. (SRI) prepared a three-pronged research design. The first part focused on providing baseline information on the paleoenvironment. In particular, we wanted to develop a model of changing conditions in Alamitos Bay and its associated wetlands, particularly as they related to changes in resource availability. The second research avenue related to the archaeology of CA-LAN-234/235. A testing plan was devised to determine site boundaries and site integrity. In addition, site characteristics, such as time of occupation, site type, and site constituents, were to be addressed through fieldwork and analysis. The third part of the research design centered on compiling ethnohistoric information on *Puvunga* and to documenting modern Native American beliefs about *Puvunga* and its relationship to the Bellflower property.

SRI was awarded a contract for the second part of the cultural review in July 1993. Later that month, a meeting was held to discuss the first draft of Boxt and Raab's campus-wide research design. At that time, it became apparent that the Native American community represented at the meeting was very much opposed to additional archaeological research. Consequently, SRI and CSULB decided to drop the first two portions of the Bellflower property research design, and to focus all energy on the ethnohistoric and ethnographic component.

This report represents the culmination of those efforts. It is divided into three parts. Part 1 provides a history of *Puvunga* and Rancho Los Alamitos. This part, written by William McCawley, begins with a general discussion of Gabrielino culture (Chapter 2) and then presents information specific to *Puvunga* (Chapter 3). The sections on *Puvunga* were aided by a mission records search performed by David Earle. Earle's complete analysis is presented in Appendix 1. Part 1 continues into the historic period, with discussions presented in chronological order of Rancho Los Alamitos during the Nieto-Figueroa, Sterns, and Reese-Bixby periods (Chapter 4).

Part 2 ties the documentary history of *Puvunga* with the archaeological record. In Chapter 5, Jeffrey Altschul provides a history of archaeological research at CA-LAN-234/235. Christopher Doolittle then provides a descriptive account of the known archaeological sites within 3 km of the CSULB campus in Chapter 6. In Chapter 7, Altschul and Donn Grenda present a model to account for the distribution of archaeological sites in the Alamitos Bay region. Theoretical implications of the nature of the *Puvunga* community, the constituent site types and their spatial distribution, and the nature of CA-LAN-234/235 are presented.

Part 3 presents the results of ethnographic interviews with modern Native Americans concerning *Puvunga*, the Bellflower property, and archaeology. The interviews were conducted by Michael Baksh, who also authored Chapter 8.

The report concludes in Chapter 9 with a summary of the results. Altschul addresses the salient topics surrounding this project: what is *Puvunga*?; where was *Puvunga* located?; the relationship between *Puvunga* and the archaeological record; the relationship between *Puvunga* and CA-LAn-234/235; and *Puvunga*, CA-LAN-234/235, and the issue of sacredness.

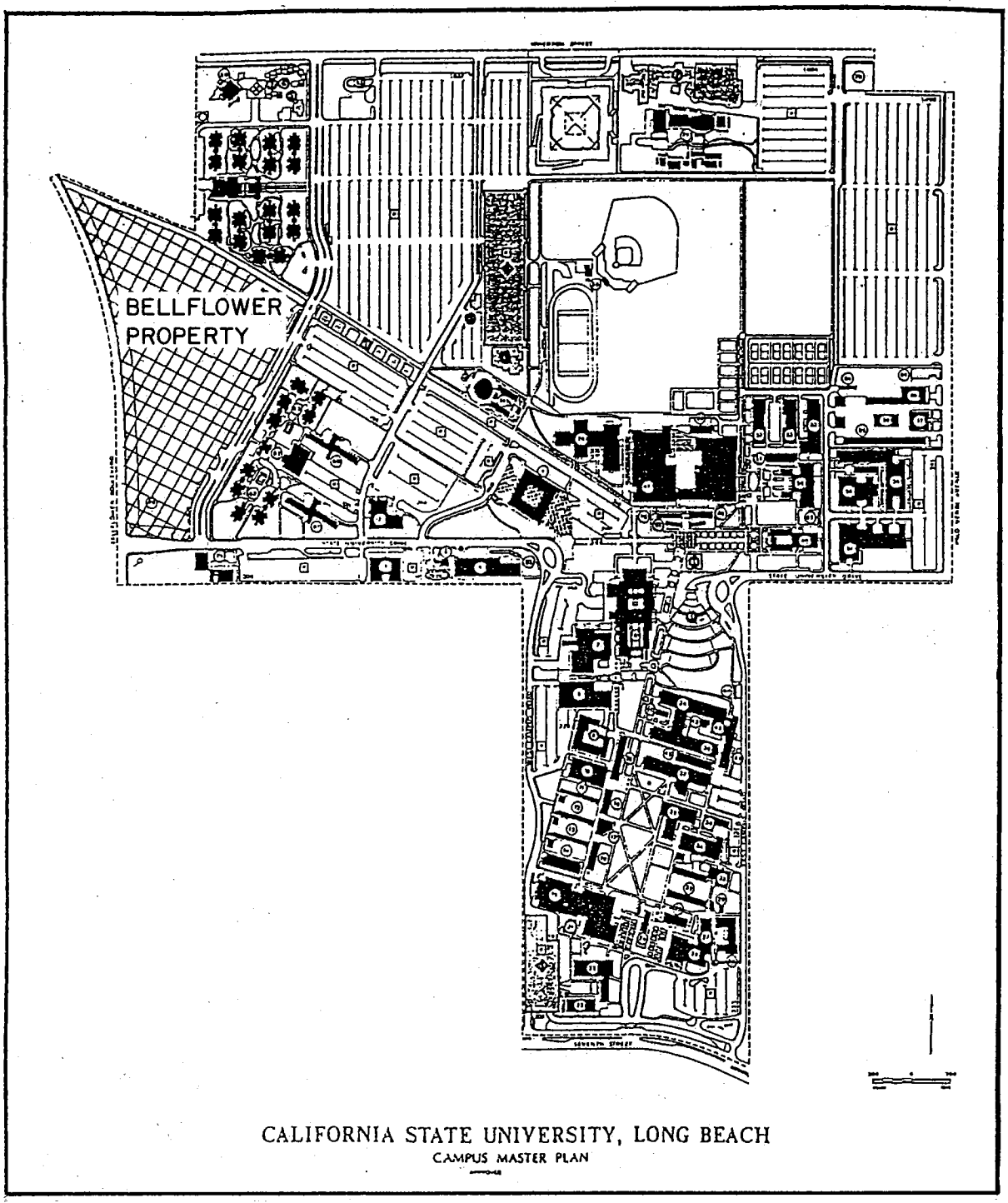

Figure 1.2. Bellflower Property

PART 1

AN ETHNOHISTORIC SURVEY OF POVUU'NGA-RANCHO LOS ALAMITOS

CHAPTER 2
A GABRIELINO ETHNOGRAPHY

William McCawley

INTRODUCTION

A crowded mesa situated near the eastern border of the City of Long Beach constitutes one of the most important historical sites in southern California. Man's use of this site and the surrounding territory spans hundreds, perhaps thousands of years, and covers the Gabrielino, Spanish, Mexican, and American phases of California history.

Historically, the mesa has been known by several names. During the Gabrielino Period it was known as *Povuu'nga* and was the site of an important *rancheria*, or Gabrielino community. As used in the present report, the term rancheria refers to an Indian community consisting of one or more lineages and the territory it controlled; typically a rancheria included a central town (or primary habitation site) as well as hunting and plant-gathering areas, ceremonial sites, workshops, and other special activity areas.

During the Spanish, Mexican, and American periods the mesa was known to the Indians as "la punta de la loma [the point of the hill --W.Mc.]" and to the Spaniards as Los Alamitos, a reference to a forest of small cottonwood trees (alamo, cottonwood) that once grew near a spring that flowed on the southeastern slope of the mesa (Harrington 1933:149). A cluster of wooden and adobe structures atop the mesa once constituted the headquarters of Rancho Los Alamitos. Today *Povuu'nga*-Alamitos Mesa (as it will be referred to in the present report) is covered by a Veteran's Hospital, the campus of California State University, Long Beach, the Rancho Los Alamitos Historical Site, and several housing developments.

The earliest historical mention of *Povuu'nga*-Alamitos Mesa is found in an account written by Father Geronimo Boscana, a Spanish missionary stationed at San Juan Capistrano. It is this work, known today by the abbreviated title *Chinigchinich*, which provides the first historical mention of the place that would later become Rancho Los Alamitos.

> Out of the confines of a *rancheria*, called Pubuna, distant from San Juan Capistrano northeast about eight leagues, came the monster, Ouiot. . . . At that time, all the inhabitants were at peace, and quietly following their domestic pursuits, but Ouiot, being of a fierce disposition, a warrior, ambitious and haughty, soon managed to gain a supremacy over many of the towns adjoining that where he originated [Boscana 1933:32].

Ouiot (or *Wewyoot* as the name will be spelled in this report) was the Gabrielino "First Captain" or "First Chief," and began his reign as a kind, pacific, and generous leader. As he grew older, however, he became cruel and abusive, and his followers assassinated him. After his death the people returned to *Povuu'nga* to meet and

> regulate the collecting of grain or seeds of the fields, and flesh to eat, for up to this time they had fed upon a kind of clay. While conferring upon this subject, there appeared to them one, called Attajen, which name implies "man", or "rational being" . . . he selected from the multitude a few of the elders, and endowed them with the power to cause the rain

to fall, to make grain, and others to make animals, such as rabbits, hares, deer, etc. And it was understood that such power was to descend to their successors [Boscana 1933:33].

Many years later there appeared in *Povuu'nga* a new spiritual being,

one called Ouiamot, son of Tacu and Auzar. I imagine that this new character was not, or at least his parents were not, inhabitants of the place, but had originated in some distant land. Ouiamot did not appear, like Ouiot, as a warrior, but as a god. . . . And this was the god, Chinigchinich, so feared, venerated, and respected by the Indians, who taught first in the town of Pubuna [Boscana 1933:33].

Chengiichngech taught the people how to perform the ritual dances and other ritual observances, and following his death he ascended to the stars, where he continues to watch over his people.

Thus, in a few brief paragraphs, Father Boscana established *Povuu'nga* as a site of central importance to Gabrielino religion and culture. *Povuu'nga* was home to both *Wewyoot*, the "First Chief" and *Chengiichngech*, the Gabrielino "creator being." The town also served as a center for ritual and economic interaction in the south-coastal Gabrielino territory.

Geographically, *Povuu'nga*-Alamitos Mesa is situated near the southeast corner of township 4 south, range 12 west, of the Los Alamitos Quadrangle. According to maps dating as early as 1834, the region lying south of the hill was dominated by saltwater marshes. Following the floods of 1867 the San Gabriel River began flowing into Alamitos Bay along a course lying to the east of *Povuu'nga*-Alamitos Mesa. A small creek or stream also flowed along the northern edge of the hill. The maximum elevation of the mesa is 75 feet above sea level; most of it lies above the 50 foot contour.

Historically, *Povuu'nga*-Alamitos Mesa has been a desirable occupation site because of its mild climate, close proximity to a freshwater source, and the protection offered by its elevated position above the local floodplain. Consequently, much of the present report deals with this geographical site when discussing the occupation of this region. It should be noted, however, that the social and economic patterns under discussion extended far beyond the limits of *Povuu'nga*-Alamitos Mesa into the surrounding countryside.

Objectives

Part 1 has four primary goals. The first is to provide a broad and comprehensive review of the ethnographic data on Gabrielino culture, including Gabrielino social, political, economic, and ritual organization. The second goal is to examine the available data on the Gabrielino rancheria of *Povuu'nga* and evaluate their significance within Gabrielino culture. The third is to provide a detailed overview of historical land use in this region from the end of the Gabrielino period to the present. The fourth goal is to examine the role which Gabrielino or other Indian peoples played in the economic and social life of Rancho Los Nietos and Rancho Los Alamitos during the Spanish, Mexican, and American periods.

Ethnographic Review of the Gabrielino Culture

The first objective of this report is to examine the political, social, economic, and ritual organization of coastal southern California Indian cultures; the focus of this discussion is the culture of the Gabrielino Indians. Data from neighboring Indian cultures including the Chumash, Luiseno,

Juaneno, Cahuilla, and Serrano will be incorporated into this discussion. The Spanish labels (i.e., Gabrielino and Fernandeno) will be compared to the actual political or cultural divisions of these Indian groups as they may have existed prior to Spanish colonization. The role played by Gabrielino lineages and rancherias in the territorial organization of the region will be examined. What ritual, political, and economic ties bound these entities together? The composition of Gabrielino religion, including the complex of rituals and beliefs associated with the *Chengiichngech* religion, will be examined in this section, and the degree to which Christianity may have impacted this religion will be discussed and evaluated.

The Rancheria of Povuu'nga

The second goal of the present report is to reconstruct the environment and geography of the coastal Gabrielino territory from Long Beach to Newport Bay using maps and other data sources from the nineteenth century. The coastal Gabrielino communities within this territory will be examined, in particular the Gabrielino rancheria of *Povuu'nga*. What other rancherias existed in this region, and how was settlement within the rancherias of *Povuu'nga* arranged? What economic and subsistence patterns did these coastal communities follow? Did the occupants of these rancherias have access to both coastal and inland resources, or were they limited to their immediate locale? What role did trade and ritual play in the economic interactions of this region? Why was *Povuu'nga* abandoned, when did this occur, and what is the relationship between the abandonment of the rancheria and missionization?

Povuu'nga - Los Alamitos Mesa During the Historic Period

The third goal of this report is to provide an overview of the historic land use of the *Povuu'nga* region from 1784 until the present, including the grants of Los Nietos and Los Alamitos, and the acquisitions of Rancho Los Alamitos by Abel Stearns in 1842, Michael Reese in 1866, and the Bixby family in 1881. The social, political, and economic organization of the ranchos during the Spanish, Mexican, and American periods will also be reviewed.

Indian Life at Rancho Los Alamitos

The fourth goal of this paper is to examine the role that the Gabrielino and other Indians played in the social and economic life of Ranchos Los Nietos and Los Alamitos. What were the cultural affiliations of the Indians living on the ranchos? Were these Indians Gabrielino, or members of other linguistic groups? How were these Indians integrated into the social and economic organization of the ranchos? Did Indians from Missions San Gabriel or San Juan Capistrano migrate to Rancho Los Alamitos following secularization of the missions in the 1830s? What impact did the smallpox epidemics of the 1860s have upon the Indians living at these ranchos?

To achieve these four goals Part 1 relies upon a variety of published and unpublished sources. Reconstructing the prehistory of the southern California region is a complex and often frustrating task; an understanding of the data sources is crucial to understanding and evaluating the information presented in the following pages.

Data Sources

A variety of published and manuscript sources have been utilized in this report. The following includes the most important of these sources; a complete list can be found in the references.

The Gabrielino Period (- 1805)

The primary sources of published data for the Gabrielino Period include *Chinigchinich*, the manuscript prepared by the Franciscan missionary Father Geronimo Boscana around 1822 and first published in 1846 (Boscana 1933). Father Boscana based his work on data obtained from Indians living at Mission San Juan Capistrano. Many of these Indians were probably Gabrielino; some may have lived at *Povuu'nga* before entering the mission. Hugo Reid's *Letters*, published in the Los Angeles Star in 1852, are another important primary source of data (Reid 1852). Hugo Reid was married to Victoria, a Gabrielino woman from the rancheria of *Comicranga*, and many of his data were undoubtedly provided by his wife and her family.

The third primary source of ethnographic data for the Gabrielino Period is the Gabrielino and Juaneno notes of John P. Harrington, available on microfilm at the University of California, Riverside (Harrington 1986). Harrington relied upon a number of Indian and non-Indian consultants in his research. Two of Harrington's most important Gabrielino consultants were Jose de los Santos Juncos, also known by the nickname of Kewen, and Jose Zalvidea. Much of the Juaneno data gathered by Harrington was provided by Jose de la Gracia Cruz, nicknamed Acu, and Anastacia de Majel.

A complete ethnography of the Gabrielino Indians must also rely heavily upon information obtained from studies of other southern California Indian cultures. Accordingly, reference is made to William Duncan Strong's research among the Juaneno, Luiseno, Serrano, and Cahuilla (Strong 1929). Much of the Chumash research published in recent years by Travis Hudson and Thomas Blackburn is relevant to the study of Gabrielino religion and ritual and is therefore incorporated into the present paper. Also included are data on Chumash economic and subsistence patterns published by Landberg (1965), and Luiseno territorial organization published by White (1963). Lowell Bean's study of the Cahuilla, *Mukat's People*, is an important source of data on Uto-Aztecan political, economic, and ritual interaction and is cited frequently.

The Nieto-Figueroa and Stearns Periods (1806-1866)

Information on the Nieto-Figueroa and Stearns periods at Rancho Los Alamitos has been obtained from a variety of published and archival sources. Among these are *disenos* (maps) and *expedientes* (dossiers or records) for the Nieto and Los Alamitos grants, land commission documents for Rancho Los Alamitos, and federal census records for the years 1850 and 1860. These data are available on microfilm through the federal archives in Laguna Niguel.

Manuscript sources for the Stearns Period at Rancho Los Alamitos include accounting and payroll records as well as correspondence between Stearns and various ranch managers. These documents are on file in the Stearns Collection at the Huntington Library in San Marino.

General information on Abel Stearns was obtained from the biography *A Yankee in Mexican California: Abel Stearns, 1798-1848*, by Doris Marion Wright (1977). Robert Glass Cleland's book, *The*

Cattle on a Thousand Hills (Cleland 1941) is an important source of historical data on southern California during the rancho period and was consulted frequently.

The Reese-Bixby Period (1866-1968)

Important sources of data for the Reese-Bixby Period include the memoirs of Sarah Bixby Smith, *Adobe Days*, and Katherine Bixby Hotchkis, *Christmas Eve at Rancho Los Alamitos* (Smith 1931; Hotchkis 1971). An historical overview of the Los Alamitos ranch house by Pamela Young, Loretta Berner, and Sally Woodbridge (Young et al. 1989) provided important information on its construction and architecture, as well as biographical data on the Bixby family. Other sources of data on the Bixby Period include payroll records on file at Rancho Los Alamitos and the photograph collection maintained at the rancho.

A Note Concerning Terminology

The Gabrielino ethnography presented in the following pages incorporates terminology that may be unfamiliar to some readers. Terms such as guilds, bureaucrats, towns, and the like are not generally employed in discussions dealing with hunter-gatherer cultures and societies.

In recent years, however, a growing body of researchers has commented on the cultural complexity of the hunter-gatherer societies of southern California (see Bean and Saubel 1972:151,152). Meighan (1959:305) noted that "hunting and gathering cultures in a favored environment may reach equal or greater complexity than some agricultural communities." Bean (1974) discussed the functional aspects of social organization in native California and the economic roles played by the chiefs and shamans.

In a similar vein, Hudson (1988:97) challenged what he termed the "classical assumption" which asserts that calendrics and astronomy originated among food-producing civilizations. Hudson pointed out that both studies were actively pursued by the Chumash, a statement that applies equally well to the Gabrielino. King (1976) described Chumash intergroup economic behavior according to the principles of a market economy with standardized mediums of exchange (shell bead currency), the production of exchange goods, and the transportation and marketing of these items.

The terminology employed in the present paper is consistent with this "revisionist" approach. Whenever possible, words emphasizing the functional aspects of Gabrielino culture have been chosen. Thus, the *tomyaar*, or chief, is referred to a the "chief financial officer" and the shaman as the "primary psychotherapist" because these are the functions they performed for the community.

The term *rancheria* as used in this report refers to the community and the area it controlled. In addition to the main habitation site this territory might have included hunting areas, seed-gathering fields, plant-gathering areas, shellfish beds, acorn groves, workshop areas, and ceremonial sites. The term town as used in this report refers to the primary settlement which was the location of the *yovaar*, or sacred enclosure, as well as the homes of the *tomyaar* and other elite members of the community.

PREHISTORY

> One of the other declared . . . that the first Indian settlers came here from the north and were led here by a captain general who they declare lives on an island and to whom they attribute life without beginning or end. This being apportioned to each tribe its land [Geiger and Meighan 1976:93].

Thus, according to the Franciscan missionaries, did the Indians at San Gabriel explain the origin of their population in the Los Angeles region. However, the Gabrielino Indians who shared this oral tradition were not the first people to occupy the Los Angeles region; in fact, our knowledge and understanding of these early occupations is still evolving.

A growing body of data in the form of radiocarbon dates from archaeological sites on the Channel Islands indicates that a fully maritime-adapted culture existed in southern California at least ten thousand years ago. San Clemente Island was occupied by 7782 B.C., and man had reached San Nicolas by 6227 B.C. (Raab and Yatsko 1990:18,19; Salls 1990). The recovery of early stone tools from Malaga Cove, a site located on Santa Monica Bay, suggests a long history of occupation for the mainland as well (Wallace 1955:188- 190).

Sometime prior to 3000 B.C. the lifestyle of the early occupants of Los Angeles underwent a significant change. Hunting, which appears to have been the primary food procurement technique during the earlier phase, became less important while the gathering of plant and wild seed foods assumed a greater role. The stimulus for this change remains unclear; however, similar developments were occurring throughout much of California at this time. Archaeologists refer to this period as the Millingstone Period or "Millingstone Horizon" because plant foods were commonly prepared using handstones and metates. The Los Angeles -- Santa Monica region was home to one group of Millingstone people whose archaeological remains are known as the "Topanga Culture" (Wallace 1955:191-193; 1978:28-30).

By 3000 B.C. (or perhaps a little later, around 2000 B.C.) the Millingstone People had developed a more sophisticated economy which combined hunting and the gathering of wild plant foods. Along the coast fishing, sea mammal hunting, and shellfish gathering had also become important activities. Important archaeological sites from this period include the Big Tujunga Site at Big Tujunga Wash in the San Fernando Valley and Little Harbor on Santa Catalina Island. Archaeologists refer to this period of diversified food gathering as the Intermediate Period or "Intermediate Horizon" (Wallace 1955:193-194; 1978:30).

Sometime during the Millingstone or Intermediate periods new peoples began entering southern California. These people spoke a language belonging to the Uto-Aztecan linguistic stock that once extended across the Great Basin region of Utah, Nevada, and California. The Uto-Aztecans may have left the Great Basin to escape drought or food shortage; they gradually entered and occupied southern California from the desert to the coast, absorbing or displacing the earlier Hokan-speaking population.

The date of the Uto-Aztecan migration remains controversial. Some consider the event to have occurred as early as 2000 B.C., while others prefer a much later date of A.D. 700. Linguistic evidence suggests sometime between A.D. 1 - 500 (Kroeber 1925:574- 580; Koerper 1979).

Clearly, however, the Uto-Aztecans were present in southern California during the final phase of prehistory, referred to as the Late Period or "Late Horizon," which is thought to have begun around A.D. 1 - 500. Culturally, the Late Period saw a number of important developments, including increased use of the bow and arrow as the primary hunting weapon, the expansion of community populations, and the evolution of regional subcultures (Wallace 1955:195-199; Willey 1966:267,274,374). By the time the

Spaniards began exploring the California coast in 1542 a number of these regional Uto-Aztecan subcultures had evolved, each speaking a distinct dialect and residing within a permanent geographical territory.

One of these Uto-Aztecan language groups was the Gabrielino, whom Alfred Kroeber (1925:621) described as the "wealthiest and most thoughtful of all the Shoshoneans [Uto-Aztecans --W.Mc.] of the state." They occupied a large territory of fertile and productive land which included the watersheds of the Los Angeles, San Gabriel, Rio Hondo, and Santa Ana rivers. This territory stretched from Topanga Canyon northeast to the base of the San Gabriel Mountains, east to the vicinity of San Bernardino, and south to Aliso Creek and the coast. The Gabrielino also occupied the Channel Islands of Santa Catalina, San Clemente, and San Nicolas, and made regular excursions to Santa Barbara Island for the purpose of hunting sea mammals (Bean and Smith 1978:538; Kroeber 1925:621; Hudson 1981:193,194; Schwartz 1960).

The Gabrielino practiced a hunter-gatherer lifestyle and lived in communities with populations ranging from 50 to 200 or perhaps 300 individuals. Culturally, they blended the hunting and gathering traditions of their Uto-Aztecan ancestors with the maritime culture of the Chumash Indians, who occupied the territory to the north near Santa Barbara. This ability to adapt to a new environment and adopt new technologies helped the Gabrielino more fully utilize the resources of their territory, and may have been an important factor in their ultimate success.

THE GABRIELINO PEOPLE

Appearance

Physically, the Gabrielino were a robust people of pleasing complexion and hair color (Wagner 1929:236,237; Fages 1937:21). The men tended to be bearded, although they kept themselves clean-shaven by plucking their whiskers with clamshell tweezers. Before missionization both men and women wore their hair long, either parted in the middle and worn loose, or in a single braid down the back. Sometimes the hair was tied on top of the head and held in place with a hairpin of bone or wood. Women wore bangs which were trimmed by singeing (Harrington 1942:15,16; Hudson and Blackburn 1985).

Gabrielino men and children typically went naked prior to missionization. Women wore skirts made from tule, plant fiber, or the bark of cottonwood or willow trees. Women of the elite class wore skirts of buckskin or sea-otter. These skirts had both a front and back flap and were worn with a belt; often they were decorated with beads or a fringe. Women of San Nicolas Island wore dresses made of bird skins (Harrington 1942:19; Hudson and Blackburn 1985; Reid 1852:23,24; Nidiver 1937:84).

Gabrielino men of the elite class sometimes wore cloaks of animal skins which were held in place by tying opposite ends together, or joining the edges with shell fasteners or pins of bone or wood. Sandals of yucca fiber might be worn when traveling over rough ground (Boscana 1933:56; Harrington 1942:19; Hudson and Blackburn 1985).

Women commonly pierced their ears with a cactus thorn or yucca needle and wore elaborate earrings of shell and feathers. During historic times bracelets of glass beads obtained from Europeans were also popular. Men also had pierced ears in which they carried small cane tubes filled with tobacco. Gabrielino chiefs (*tomyaars*) and shamans sometimes wore hawk feathers through a pierced nasal septum (Reid 1852:24; Harrington 1942:16; 1986:R106 F192; Hudson and Blackburn 1985).

Other forms of personal adornment included tattooing and body painting. Both men and women wore tattoos, which might consist of vertical chin lines, transverse bars on the cheeks, or both. The Gabrielino reportedly tattooed their foreheads, while the Fernandeno tattooed lines on their chins and circles on their cheeks (Harrington 1942:16; Hudson and Blackburn 1985).

Tattooing was accomplished by pricking the skin with a cactus thorn and rubbing charcoal from the mescal plant into the wound. This produced a permanent blue tattoo. Charcoal mixed with the juice of green nightshade leaves also produced a blue design. This mixture was applied to pads which were then tied over the skin punctures (Boscana 1933:48; Hudson and Blackburn 1985). To produce a green tattoo the juice from green nightshade leaves was used alone. One of Harrington's consultants reported that "Untan la quijada [they smeared the jaw] with the pounded leaves of this [nightshade] & de ay lo pican [pricked it]. And se mura verde despues [it looks green afterwards]" (Harrington 1986:R105 F313, comments in brackets by W.Mc.).

Body painting varied according to the occasion and the individual's taste. Red, white, black, and perhaps blue were used in ritual body painting, the pigment being applied with a finger or stick. Women commonly used red ochre as both a rouge and a sunscreen (Reid 1852:38; Harrington 1942:18; Hudson and Blackburn 1985).

The Name Gabrielino

It is important to be specific and clear when defining the term Gabrielino. Historically, the name Gabrielino (which is spelled Gabrilenos or Gabrielenos in older manuscripts) came into use around 1876 and refers to the Indians living in the vicinity of Los Angeles around 1769. The name stems from the incorporation of many of these Indians into the pool of converts dwelling at Mission San Gabriel. Similarly, the Indians who originally occupied the San Fernando Valley, and who share a similar language and many cultural traits with the Gabrielino, have been referred to as the Fernandeno (Bean and Smith 1978:538,548; Heizer 1968:105-107).

Although many Gabrielino Indians were incorporated into Mission San Gabriel, it should not be assumed that all of the Indians living at Mission San Gabriel were Gabrielino. In fact, the mission was an enormous community of farms and ranchos occupied by hundreds, sometimes thousands of Indians from various language groups. Mission San Gabriel's population included not only Gabrielino, but also Kitanemuk, Serrano, and Cahuilla Indians; San Fernando's population included Kitanemuk, Tataviam, Cahuilla, and Chumash Indians as well as the Fernandeno (Bean and Smith 1978:573; Blackburn and Bean 1978:564; Bean 1978:583; King and Blackburn 1978:536; Forbes 1966:137).

It would appear from the information presently available that the Gabrielino did not originally possess a generally accepted name for themselves (Reid 1852:9). Instead, they seem to have identified themselves by referring to their community. The ending "vit," "bit," or "pet" was added to the end of the community name; thus, a person from *Kaweenga* was a "*Kaweengavit*" (Johnston 1962:10).

A number of Gabrielino terms have been offered as Indian names synonymous with Gabrielino; that is, as general names for all of the Indians sharing the Gabrielino language and culture. However, the historical evidence for these terms is far from certain.

For example, the terms *Tong-v_* and *Kizh* have been offered as Indian names synonymous with the term Gabrielino. According to C. Hart Merriam the Gabrielino living near Tejon in the later years of the nineteenth century referred to themselves as *Tong-v_*, which Merriam accepted as the original Indian name for Gabrielino (Merriam 1955:7-86; n.d. Bancroft Library, Carton 6, Folder Y/24a/E77). Yet J.P. Harrington reported that "*t_we*" was a rancheria in the San Gabriel area (Harrington

1986:R104 F490). Adan Castillo, another Harrington consultant, told him that "to'_va" means "grindery."

> R. pom-to'_va [would] mean where the people used to grind their seeds on the rocks. R. po-to'_va, where he or she grinds. tcam-to'_va, our grindery. The noun has to have some possessional prefixed [Harrington 1986:R105 F426].

Similarly, the name *Kizh*, or *Kij*, perhaps derived from the Gabrielino word meaning "houses," has been given as a generic term for these people (Heizer 1968:105, note 1; Hale 1846). Once again, however, Harrington offers more specific locational data:

> Mr. Raimundo Yorba said that his mother was half San Grabielino Indian. She was what they called a Kichireno, one of a bunch of people that lived at that place just this side of San Gabriel which is known as the Mission Vieja [present day Whittier Narrows --W.Mc.]. Kichireno is not a placename, but a tribename, the name of a kind of people [Harrington 1986:R129, F345].

Other terms offered as generic names for the Gabrielino include *Tobikhar,* which means "settlers," and may have been derived from *Tobohar* or *Tovaar*, the Gabrielino name for the earth. *Tobikhar* seems to have been a name used by the Gabrielino living in the San Gabriel region in 1875 (Heizer 1968:105, note 1; Gatschet 1879). The Gabrielino of the Los Angeles area reportedly called themselves *Komiivet*, from the word *komii*, meaning "east." J.P. Harrington noted that the Fernandeno "called the Gabrielino tribe *komitahat*, gente de San Grabiel. *Komivit*, Grabielino -- means about the same" (Harrington 1986:R106 F62).

Ethnographic data, therefore, suggest that these terms were local and were not used as general names for all of the Indians sharing the Gabrielino language and culture. During historic times the Gabrielino seem to have adopted the name *Pepii'maris* to identify themselves, although properly speaking only islanders from Santa Catalina, which the Gabrielino knew as *Pemuu* (or *Pemuu'nga*), were *Pepii'maris* (Harrington 1986:R102 F24; Kroeber 1925:634).

Today many Gabrielino prefer the name *Tong-v_* because it is based on an Indian word. While respecting this preference, the present paper will retain the name Gabrielino because it is more widely recognized in professional literature.

In summary, therefore, the name Gabrielino as used in this paper refers to the Indians who occupied the Los Angeles -- Orange County region at the time of Spanish colonization in 1769. These Indians spoke several regional dialects of the same Uto-Aztecan language and shared the same hunter-gatherer culture. Many, but not all, of these Indians entered the labor force of missions San Gabriel, San Fernando, and San Juan Capistrano during the 18th century. The term Fernandeno will be used when referring to cultural traits specific to the Gabrielino-speaking peoples dwelling in the San Fernando Valley.

TERRITORY, ENVIRONMENT, AND POPULATION

Gabrielino Territory

The Gabrielino territory encompassed more than 1,500 square miles, stretching from Topanga Canyon northeast to the base of the San Gabriel Mountains, east to the vicinity of San Bernardino, and south to Aliso Creek and the coast (Figure 2.1). Topographically, most of this territory lies under 1,000

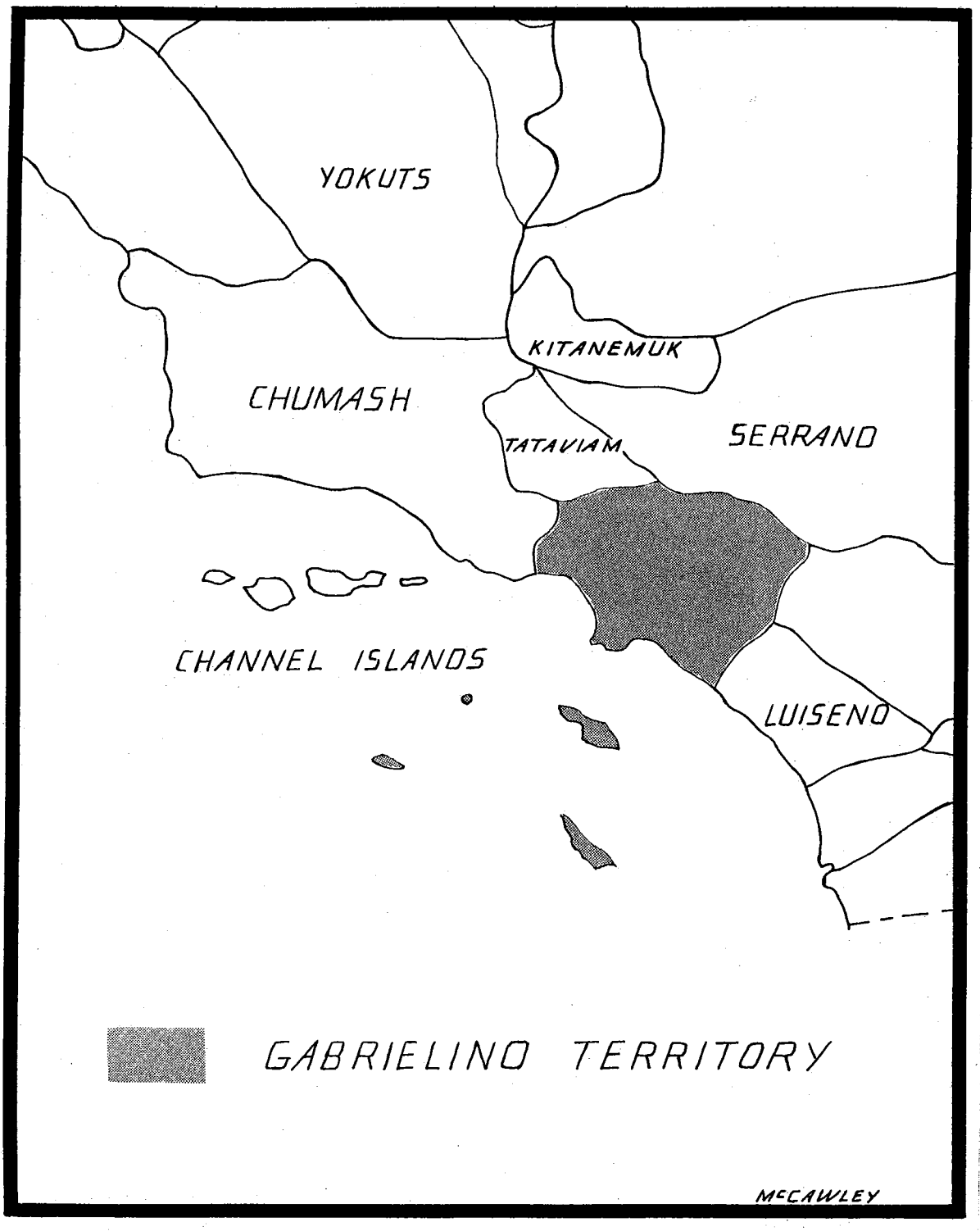

Figure 2.1. The Gabrielino territory.

feet in elevation; it includes several broad, inland valleys and a lengthy, well-watered coastal region. The inland valleys are the San Fernando, San Gabriel, and San Bernardino valleys; the coastal region is here designated the Los Angeles -- Santa Ana Plain. Also included in the Gabrielino territory were the southern Channel Islands of Santa Catalina, San Clemente, San Nicolas, and Santa Barbara.

It is possible to offer a general outline of the Gabrielino homeland; however, the boundaries of this territory should not be misconstrued as legal or political borders in the sense that such boundaries are understood today. In fact, the Gabrielino would probably have found little use for such a concept. They shared a hunter-gatherer lifestyle and economy with the other Indians of this region, and interaction between these peoples was common. This interaction, which often extended across language boundaries, included intermarriage as well as political, economic, and ritual alliances. Anthropologist W.D. Strong noted this cultural continuity among the Indians of southern California and described it as "a liquid medium that flowed more or less evenly from group to group, thinning out more and more the farther each cultural influence extended from its source" (Strong 1929:145,146).

In this context, then, boundaries between language groups should be seen as broad frontiers of shared influence, characterized by bilingualism, intermarriage, and a general blending of cultural characteristics. The Gabrielino living in the San Fernando Valley, for example, spoke Ventureno, a Chumash dialect, and many of the inhabitants of the Gabrielino rancheria of *Topaa'nga* had Chumash names, as might be expected of a community located near the Gabrielino-Chumash border. In turn, the Chumash community of *Maliwu* had Gabrielino occupants and was ruled by a Gabrielino chief by the name of Saplay (Harrington 1986:R106 F81; Brown 1967:8,45).

To the east, the Santa Ana Mountains were a region of shared influence with the Juaneno. Temescal Valley, situated east of the Santa Ana Mountains, was occupied by both the Juaneno and Gabrielino. The Juaneno also ranged as far west as the Santa Ana River, an area well within the traditional Gabrielino boundary (Kroeber 1906-1907:144; O'Neil 1988).

Climate and Environmental Zones

The climate of the Gabrielino region is mild, being predominantly Hot Steppe, although in the foothills and mountains as well as along the coast the climatic type is Warm Mediterranean. Precipitation averages less than 15 inches per year, although more than twice that amount may fall in the mountain regions. During Gabrielino times the region was well-watered by runoff that fed three major river systems: the Los Angeles River; the Rio Hondo -- San Gabriel River; and the Santa Ana River (Bean and Smith 1978:539).

At least nine environmental zones, or habitats, once existed within the Gabrielino territory. These include the saltmarsh-estuary, freshwater marsh, beach and coastal strand, coastal sage- scrub, grassland-herbland, southern oak woodland, riparian woodland, chaparral, and mountain zones (Dixon 1974:40-43; Bean and Smith 1978:538,539).

Saltmarsh-estuary habitats were located near the seashore and consisted of sand or mud flats connected to the ocean by saltwater channels. This zone was important for its abundance of waterfowl as well as edible shellfish such as pectens, cockles, and oysters.

Freshwater marsh habitats could be found throughout the Gabrielino territory; they were replenished each winter by flooding from streams and rivers. Prior to the onset of large-scale ranching operations, the dense underbrush that characterized much of the Gabrielino territory may have prevented many of the rivers from becoming channelized, thereby contributing to the growth of the marshlands. One early history of Los Angeles reports that

> at the date of the settlement of Los Angeles City, a large portion of the country, from the central part of the city to the tide water of the sea, through and over which the Los Angeles River now finds its way to the ocean, was largely covered with a forest, interspersed with tracts of marsh. From that time until 1825, it was seldom, if in any year, that the river discharged, even during the rainy season, its waters into the sea. Instead of having a river-way to the sea, the waters spread over the country, filling the depressions in the surface, and forming lakes, ponds, and marshes. The river water, if any, that reached the ocean, drained off from the land at so many places, and in such small volumes, that no channel existed until the flood of 1825, which, by cutting a river-way to tide water, drained the marsh land and caused the forests to disappear [Warner et al. 1876:17,18].

The beach and coastal strand offered a wide variety of foods to the Gabrielino including land and sea mammals, sea birds, fish, and shellfish. Sea mammals could be hunted for food, for furs and pelts used to make clothing, and for bone used in tools and other implements. Some limited fishing could be accomplished from the shore, while deep-water fish could be taken using plank canoes.

The coastal sage-scrub zone covered much of the prairie and hillsides. Cactus and low shrubs formed the primary vegetation in the zone and offered a variety of edible seeds and plant foods to the Gabrielino gatherer. The fruit of the prickly pear cactus was a special delicacy. In addition, many of the small mammals hunted by the Gabrielino could be found in this habitat.

The grassland-herbland zone extended from the prairie onto the lower hillslopes and provided a home for antelope, deer, rabbits, and small rodents. The Gabrielino and other Indians periodically burned off such areas to increase wild seed foods and improve the grazing for deer. In 1769 members of Gaspar de Portola's party observed one such burned area near Alisos Creek, and another in the Puente Hills (Timbrook et al. 1982; Bolton 1927:137,143).

Southern oak woodland was often interspersed with the grassland-herbland zone; as the name suggests, this habitat offered stands of acorn-bearing oaks to Gabrielino food gatherers. The acorn was a staple of the Gabrielino diet, and oak groves were probably owned by lineages that gathered the crops each fall. Acorns from the Coast Live Oak were considered the most desirable, although in times of need even acorns from the Scrub Oak could be eaten.

The riparian (streamside) woodland zone was one of the richest habitats in terms of food and manufacturing resources. Vegetation typical of this zone includes sycamores, alders, willows, cottonwoods, grasses, and herbs; many of these plants provided materials for Gabrielino basketry and home construction. The streamside woodland also attracted deer, antelope, small mammals, and birds, all of which were hunted by the Gabrielino.

During Gabrielino times much of the interior was part of the chaparral zone. Chaparral is a dense, evergreen shrubbery which grows six or more feet in height and once covered many of the hillsides. The two most important resources of this zone were deer and the acorns of the scrub oak, which could be eaten when more desirable species of oak were not bearing.

Finally, the mountain zone surrounded the Gabrielino territory on three sides and offered a variety of food resources such as deer, small mammals, acorns, pinyon nuts, and sage. During spring and summer the Gabrielino hunted and gathered plant foods in the lower reaches of mountain canyons. In the late summer and fall they moved into the higher elevations to gather acorns, then returned to the lower canyons for the winter months (Hudson 1971:56,70).

Regional Settlement and Subsistence Patterns

The mainland Gabrielino considered several factors when choosing locations for their rancherias, including the availability of a steady food supply and a reliable water source, and protection against flooding. Luiseno and Chumash studies suggest that large, permanent rancherias developed near the interfaces of several environmental zones, thereby gaining access to a wider variety of food resources (White 1963:116,117; Landberg 1965:111,112).

Gabrielino towns and settlements also seem to have been located near the intersections of two or more environmental zones. Three geographical areas appear to have been favored: the prairie- foothill transition zone ringing the interior valleys; elevated locations near major watercourses; and coastal sites near sheltered bays and inlets.

A preliminary model of mainland Gabrielino settlement and subsistence patterns suggests four broad geographical divisions (Figure 2.2; see Hudson 1971). It should be mentioned, however, that this model does not encompass all of the variations in Gabrielino settlement pattern. Instead, it provides a basic framework for evaluating settlement data and identifying regional patterns.

The first region comprises the interior mountains and foothills, including the Santa Ana, San Gabriel, San Bernardino, and Santa Monica mountain ranges. Distinctive food resources within this region were deer, rabbits and other small animals, acorns, sage, and pinyon nuts.

The second region includes the prairies flanking the interior mountains, namely, the San Fernando, San Gabriel, and San Bernardino valleys as well as the Los Angeles -- Santa Ana Plain. Characteristic food resources included acorns, sage, yucca, deer, small rodents, cactus fruit, and a wide range of birds, plants, and animals associated with the freshwater marshes.

The third region is the exposed coast extending from San Pedro south to Newport Bay. Marine food resources within this area include shellfish, rays, sharks, sea-birds, and a number of shallow-water fishes found in coastal inlets.

The fourth region is the sheltered coastal strip extending from San Pedro north to Topanga Canyon. Characteristic food resources within this region include sea mammals, sea birds, sharks, rays, and many species of pelagic (deep-water) fishes that could be obtained by fishing from plank canoes.

The present model suggests that Gabrielino settlement and subsistence practices can be divided into three regional patterns. The first pattern applies to the rancherias situated in the interior mountains, where towns or primary settlements were located in the lower reaches of canyons. During the spring and summer families would disperse to seasonal camps to gather seeds, bulbs, and wild plant foods. In the fall they would move to local oak groves to gather acorns, returning to the primary settlement for the winter.

The second settlement and subsistence pattern applies to rancherias situated in the coastal regions and adjacent prairies south of San Pedro; here the primary settlements were located on the prairie some distance inland from the coast. During the winter families dispersed to shellfish-gathering camps located along the strip of exposed coast south of San Pedro. Much of this area was low-lying marshlands subject to winter flooding and was therefore unsuitable for permanent habitation. During the summer the families returned to the primary settlements, and during the fall they migrated to the oak groves to gather acorns.

The third pattern applies to rancherias located in the coastal regions and adjacent prairies north of San Pedro. Here the primary settlements were located on the coast in sheltered bays and inlets.

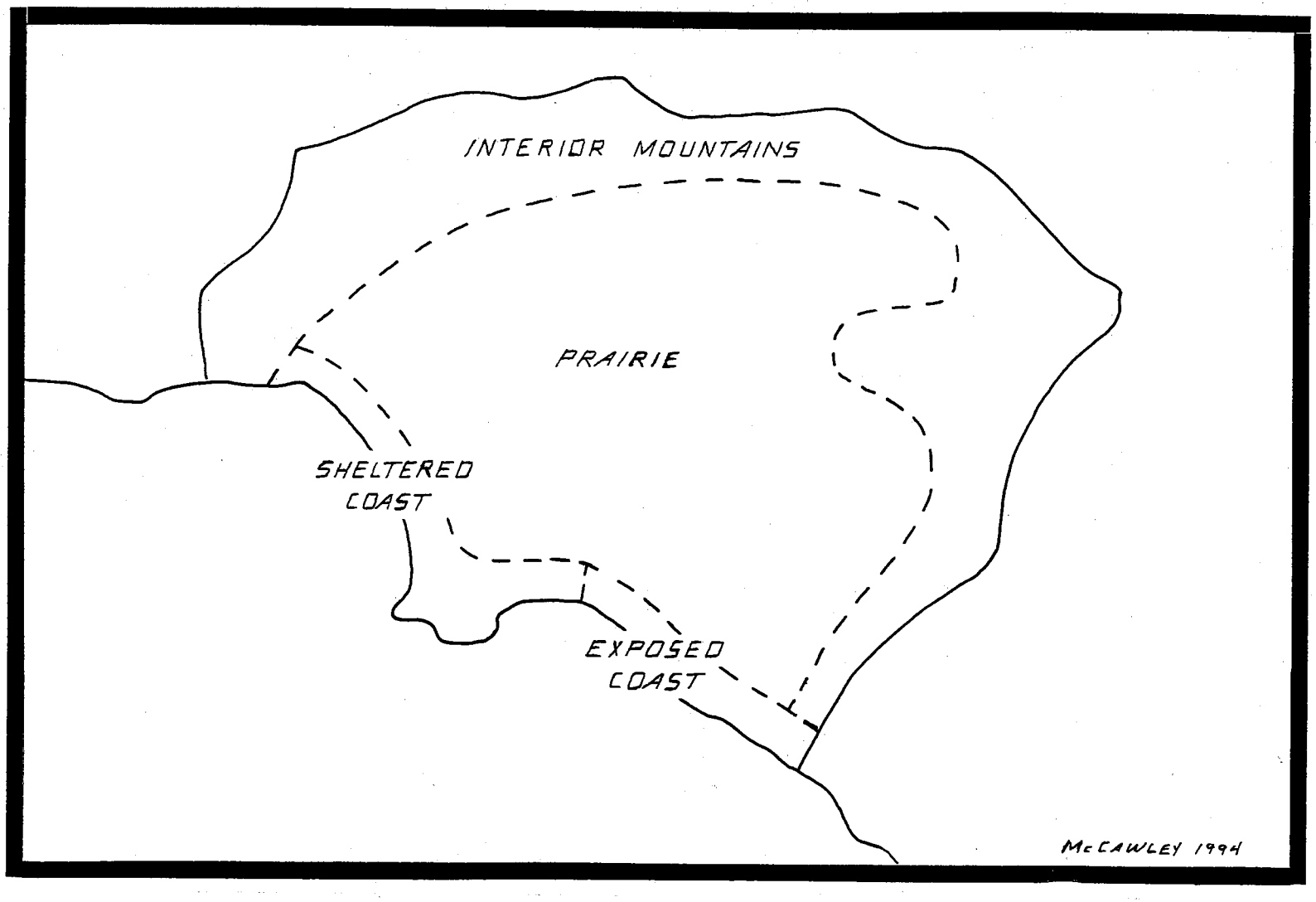

Figure 2.2. Gabrielino settlement-subsistence regions (after Hudson 1971).

During the fall and winter, when ocean conditions made it impossible to fish, the Indians dispersed to inland camps to gather acorns and other wild seed foods. They returned to the coast during the spring.

Within each of these geographical regions were a number of rancherias (communities), each populated by one or more lineages comprising several related families. Each rancheria maintained a permanent territory or usage area, which (based upon data obtained from the inland Luiseno) averaged thirty square miles (White 1963:117). The Gabrielino are generally believed to have organized their rancherias as "central-based wandering communities" consisting of "a central settlement occupied for a certain portion of the year and camps which are stops along a wandering mode which comprises the rest of the year's activities" (Koerper 1981:7). The central settlement (or town as it is referred to in this paper), comprises the ceremonial, political, and economic center of the community; seasonal camps comprise hunting areas, shellfish gathering camps, acorn groves, seed-bearing fields, and other lineage or family-owned areas. Other outlying sites might include quarries, tool processing stations, and ceremonial areas (see also Landberg 1965:83-99).

A second community model that may have existed in coastal regions with optimal food supplies is the "semi-permanent sedentary" settlement pattern. Semi-permanent sedentary communities had stable populations which "were continuously stationary over a period of years," but "which must,

Population Estimates

Estimates of the total Gabrielino population must be based on limited data; previously published estimates exceed 5,000 for the year A.D. 1770 (Bean and Smith 1978:540). To substantiate these estimates it is necessary to review the early historical and ethnographic data.

Hugo Reid identified 28 Gabrielino communities and noted that "there were a great many more villages than the above, probably some forty" (Reid 1852:8). Using present data more than 50 community names can be identified for the Gabrielino territory. These are as follows:

San Fernando Valley

Jucjaunga
'Ashawnga
Siutcanga
Pasheeknga
'Achooykomenga
Pakooynga
Tohuunga
Muuhonga
Kaweenga
Haahamonga

San Gabriel Valley

Shevaanga
Sonaanga
Sheshiikwanonga
'Akuuronga
Huutnga
'Iisanchanga
Wiichinga
'Aluupkenga
'Ashuukshanga
Weniinga
'Ahwiinga
Pemookanga

San Bernardino Valley

Tooypinga
Wapijanga
Pashiinonga
Paxauxa
Horuuvnga
Kuukamonga
Wa'aachnga
Homhoa
Paamayam

The Los Angeles -- Santa Ana Plain

Maawnga
Yaanga
'Apaacheanga
'Ochuunga
Chokiishnga
Naxaaw'nga
Tevaaxa'anga
Hotuuknga
Pasbenga
Topaa'nga
Kecheekvet
Saa'anga
Waachnga
'Ongoovanga
Waachnga
Toveemonga
Chaawvenga
Swaanga
'Aataveanga
Kiinkenga
Haraasnga
Xuuxonga
'Ahwaanga
Povuu'nga
Lukupa
Kengaa
Moyoonga

Channel Islands (permanently occupied)

Pemoonga (Santa Catalina)
Kiinkenga (San Clemente)
Haraasnga (San Nicolas)
Najquqar (Isthmus of Catalina)

Estimates of the average population size of Gabrielino rancherias must be based on the accounts of the early explorers. These indicate that town populations ranged from 50 to 150 occupants at the time of European contact; 100 is perhaps a reasonable estimated average (Smith and Teggart 1909; Teggart 1911). Using the above data, if only 50 of the Gabrielino communities listed above were simultaneously occupied by at least 100 people, estimates of a total Gabrielino population of 5,000 or more is substantiated.

The above calculation must be qualified by several points. First, some Gabrielino rancherias may have had more than 100 inhabitants. When Sebastian Vizcaino visited the isthmus of Santa Catalina Island in 1602 his party was met by more than 300 Indians. Whether these represent the population of the entire island or merely the town of *Najquqar* is unclear (Bolton 1908:85). When the Portolaexpedition visited the San Fernando rancheria of *Siutcanga* in 1769 the explorers found it occupied by 205 Indian men, women, and children (Teggart 1911:24,25).

Some researchers have also suggested that early disease epidemics reduced the population of the Gabrielino rancherias prior to the first European visits. Pablo Tac, a Luiseno Indian, reported that an early, possibly pre-mission epidemic reduced the Luiseno population from 5,000 to 3,000 (Tac 1952; see Earle, this volume for a more complete discussion of early epidemics). If the Gabrielino were affected by unrecorded outbreaks of disease the pre-1769 Gabrielino population could have been greater than 5,000.

GABRIELINO ECONOMIC ORGANIZATION

The Gabrielino Economy

The Gabrielino developed an extremely efficient system for the procurement and distribution of food resources. Food resources varied according to topography and environment; on the Channel Islands, for example, land mammals and certain plant foods were scarce, while the inland valleys lacked access to fresh fish and shellfish. Seasonal availability also affected many of the food resources utilized

by the Gabrielino. To overcome these problems the Gabrielino developed a market system that utilized trade and ritual exchange and a standardized shell bead currency to distribute food more fully, thereby lessening the disruptive social effects of food shortages.

As a further measure against food shortages, communal food reserves were established under the management of the *tomyaar*, and hunters and fishermen were required to deposit a portion of their catch therein. Family food caches might also be maintained at locations outside the primary settlement for times of special need (Boscana 1933:43; Reid 1852:57; Bean 1972:53-55).

Food-gathering responsibilities depended upon sex and age. Men hunted and fished, while women and the elderly gathered plant foods, roots, nuts, and seeds. During certain seasons the entire community joined to gather seasonal foods or cooperate in large- scale rabbit hunts (Boscana 1933:56,65; Bean and Smith 1978:546; Bean 1972:37). In August of 1769 the Portolaupon "the entire population of an Indian village engaged in harvesting seeds on the plain" a short distance from the Los Angeles River (Teggart 1911:21).

Although research on the Gabrielino economy is limited, an outline can be developed based on data available for the Chumash (see King 1976). Like the Chumash, the Gabrielino developed a basic "market economy" in which individual profit motive and the law of supply and demand were the primary principles. This market economy displayed five important features. First, trade served to keep material goods in constant circulation. Second, people dwelling in regions that lacked a reliable food supply could manufacture items to trade for food. Third, the expansion of trade promoted the development of guilds of craft specialists. Fourth, the expansion of trade stimulated the use of a standardized currency of shell-bead money. Fifth, control of certain aspects of this economy (especially trade) was centralized in the office of the *tomyaar*. In addition, a number of socio-economic controls were developed to control inflation. For example, the destruction of goods that accompanied the Mourning Ceremony reduced the supply of shell beads and other manufactured items produced by craftsmen.

Trade

Food and manufactured goods were kept in constant circulation through networks of trade and ritual exchange. The mainland Gabrielino maintained trade relations with the Cahuilla, Serrano, Luiseno, Chumash, and Mohave, as well as the island Gabrielino. Soapstone, asphaltum, and shell beads were exchanged with the Cahuilla for food products, furs, hides, obsidian, and salt (Bean 1972:123). Shell bead money, fish, sea-otter skins, and soapstone were exchanged with the Serrano for deerskins and seed foods (Reid 1852:43,44; Strong 1929:95,96). Obsidian obtained from the region near the Salton Sea was obtained through trade with the Luiseno (Koerper et al. 1986).

Jose de los Santos Juncos reported that the "Tejon Indians used to come to Los Angeles with quantities of deer skins and sell them. They used to come to San Gabriel and attend fiestas there" (Harrington 1986:R102 F33). Raw soapstone as well as finished items such as ollas, bowls, and smoking pipes were traded to the Chumash, and this trade continued well into the Mission period (King 1976:315; Kroeber 1925:629; Wlodarski and Larson 1976).

The Mohave and other Colorado River peoples traveled to the coast to trade with the Gabrielino, and archaeological evidence indicates that this trade was already in progress by A.D. 900-1000 (Cook 1962:161; Heizer 1941; Walker 1952:112-116; Forbes 1961; Ruby and Blackburn 1964). The main articles of this long-distance trade were luxury goods, such as red ochre, blankets, and shirts of deer or antelope skin, which were traded by the Colorado River peoples for shell and soapstone (Cook 1962:158,159; Ruby 1970:96,266,267).

The Gabrielino of Santa Catalina Island traded soapstone objects as well as roots, seal and otter skins, red ochre, shell beads, and lumps of lead ore (which was used for paint) to the mainlanders in return for plant foods and certain manufactured items (Strong 1929:95,96; Martinez 1938:52; Vizcaino 1959:14,16; Meighan and Johnson 1957; Wagner 1929:237; Finnerty et al. 1970). A major center for the distribution of soapstone goods to the mainland was located on Catalina at *Najquqar* (Isthmus Cove), and mainland trade depots were located at Redondo and San Pedro (Finnerty et al. 1970; Kroeber 1925:629).

Manufacturing and Craftsmen's Guilds

Regions having a less reliable food supply could increase their food supply by manufacturing items for trade. Manufacturing was further promoted by the development of craft specialists who were organized into guilds that controlled an industry. These craft specialists "were somewhat analogous to medieval burghers -- the first townsmen, since it appears that they clustered somewhat in larger towns... where their crafts would have more ready markets" (Bean 1974:116). Areas of craft specialization included plank canoe manufacturing; soapstone quarrying and the manufacturing of soapstone articles; net and bow-and-arrow construction; beadmaking; and woodworking (Boscana 1933:56; Fages 1937:34,35; King 1976:299; Hudson et al. 1978:153-156).

The development of guilds also established a network of trading partnerships that extended across community and language barriers. Members of the canoe guild, for example, commonly provided lodging for visiting members, and Gabrielinos may have resided in Chumash communities on a permanent basis (Librado and Harrington 1977:25,101, note 28; Hudson et al. 1978:142, note 308). New guild members were inducted either from the families of existing members or through a fictitious "kinship" arrangement in which new members were "adopted" by existing members (Hudson et al. 1978:154 note 331).

Shell Beads, Ritual Exchange, and Tomyaars

A standardized currency of shell bead money was developed using *Olivella* shells, while knotted cords were used to record the amount and value of transactions. The value of a string of shell beads depended not only on its length but also on the size and quality of the individual beads. It is indicative of the strength of trade relations between the Gabrielino and Chumash that the latter adopted both the Gabrielino units of measure and the terminology used to describe them (Reid 1852:43; Martinez 1938:45; Heizer 1968:121,122, note 62; Harrington 1986:R104 F006).

Ritual lineage gatherings provided important opportunities for trade. As noted above, lineages were grouped into two separate moieties named "wildcat" and "coyote," each of which owned some of the components necessary for a ritual performance. Thus, to have successful ritual it was necessary that two or more lineages join together. An example of such a lineage gathering was observed in 1769 by the members of the Portolathe people of one village "having a feast and dance, to which they had invited their neighbors of the river called Jesus de los Temblores" (Bolton 1927:143).

Lineages that allied themselves in ritual-political-economic alliances are termed "ritual congregations," and a special feature of these ritual networks was the exchange of shell bead money that occurred between the Gabrielino, Chumash, Cahuilla, Serrano, Luiseno and others (Bean 1974:17; 1972:151-153; Strong 1929:98). When a lineage wished to host a ritual, the *tomyaar* sent strings of shell beads as invitations to other lineages. If a lineage did not receive a string of beads yet still wished to

attend, they could do so by sending a string of beads to the host lineage. Later the guests would reciprocate by hosting their own festivals (Bean 1972:137).

Throughout the Gabrielino economy the *tomyaar* served as the primary business manager and executive officer. *Tomyaars* were responsible for managing the community food reserves as well as organizing the ritual gatherings. *Tomyaars* (and other wealthy individuals) also owned the *te'aats* (plank canoes) and were the main entrepreneurs in the trade between the mainland and the islands.

Hunting

The foundation of the Gabrielino economy was the wealth of natural resources available in the Gabrielino homeland. Faunal resources, which were obtained through hunting and fishing, included land mammals, sea mammals, fish, shellfish, insects, and reptiles. Hugo Reid wrote that

> the animal food in use among them was deer meat, young coyotes, squirrels, badgers, rats, gophers, snakes, racoons, skunks, wildcats, the small crow, the blackbirds, hawks, ground owls, and snakes, with the exception of the rattle snake [Reid 1852:22].

Other animals specifically mentioned as having been consumed by the Gabrielino include antelope, wolf, fox, cony, hare, dog, mole, bear, dove, and mud hen (Fages 1937:22; Geiger and Meighan 1976:85; Harrington 1942:7,8).

Insects also formed an important part of the Gabrielino diet. Hugo Reid (1852:22) wrote that "the large locust or grasshopper was a favorite morsel, roasted on a stick at the fire." J.P. Harrington added yellow-jacket larvae to the list of Gabrielino insect foods (Harrington 1942:8). Other insects likely consumed by the Gabrielino include the larvae of bees, wasps, ants, beetles, white grubs, termites, and maggots (Essig 1934).

The Indians of southern California were forced to rely most heavily upon meat during the winter when plant foods were scarce. At this time of year large scale rabbit hunts were held in which the rabbits were chased into long nets stretched across the ground (Harrington 1986:R102, F578; Bean 1972:156).

The Gabrielino prepared meat foods by jerking, roasting, boiling, and baking in earth ovens. Small rodents were often crushed, bones and all, and consumed in mush or soup (Harrington 1942:9; Bean 1972:60). Jose de los Santos Juncos reported that "it was the . . . custom to give the bones of . . . liebres [hares -- W.Mc.] or deers to old women or old men -- the old women or old men pounded the bones up fine in a mortar, added salt and ate them together with chia" (Harrington 1986:R105 F571). Meat was also sometimes consumed raw, and blood was drunk while still fresh (Boscana 1933:24).

In addition to food, land and sea mammals also provided hides for skirts, capes, robes, blankets, and containers. Skins and furs were dressed using an oil tanning technique. A split cobble or fleshing tool of bone or shell was used to remove excess fat and meat from the hide. The pelt was then placed against a wooden support and rubbed with a preservative of oil or grease, or brains and wood ashes (Harrington 1942:13; Hudson and Blackburn 1978).

Land and sea mammals also provided bone for making needles, fishhooks, awls, whistles, flutes, and wedges for splitting wood. Deer sinew was used by the Fernandeno in the manufacture of composition bows. Deer hooves tied in bundles were used as rattles, as were turtle shells filled with pebbles and mounted on wooden handles (Reid 1852:44; Harrington 1942:13,14,28,29; Hudson and Blackburn 1982;1985; Wallace 1980).

Gabrielino hunting techniques reflected a versatile set of strategies for capturing and killing prey. Large animals were hunted with bow and arrow, while smaller game was taken with deadfalls, snares, nets, slings, and throwing clubs. Burrowing animals were smoked from their nests and clubbed to death (Harrington 1942:6; Bean and Smith 1978:546).

Deer hunters wore decoy headdress to aid in stalking prey. Hugo Reid wrote that

> the skin of a deer's head and neck was put on their own, and on seeing game they would appear to be grazing... By such means they approached so near to make the first arrow "tell" [Reid 1852:36].

Gabrielino hunters used both "self" bows and "composition" bows, the latter of which were strengthened with deer sinew held in place with pine pitch. Bows were three to three-and-one-half feet in length and were manufactured from holly, elder, pinyon, or juniper (Harrington 1942:14; Hudson and Blackburn 1982). Arrows were of two types: a "self-arrow" with a solid wooden shaft and a "compound arrow" made from a cane shaft with a wooden point inserted and secured with adhesive and fiber cord. Arrows were fletched with three feathers held in place with sinew and tar or glue. Arrows were tipped according to use; tips might consist of a sharpened foreshaft, a stone point, or crossed sticks (for hunting small birds). Quivers were made from animal skins sewn up the middle (Harrington 1942:14,15; Hudson and Blackburn 1982).

Knives of cane were used to cut up meat, as were hafted knives of flint and wood. Father Juan Vizcaino wrote of the Catalina Gabrielino that "they carry as arms, a kind of knives with wide stone points, hafted in little wide wooden handles, which they carry on the head" (Vizcaino 1959:14,15). Hunters also employed long nets for catching rabbits. Jose Zalvidea wrote that "the Indians used to have long traps made of network... They used them for catching animals for the festival" (Harrington 1986:R102 F578). Fire was used to drive the rabbits into the nets, which might be as much as 100 feet in length (Harrington 1942:6; Hudson and Blackburn 1982).

Fishing, Sea Mammal Hunting, and Shellfish Gathering

Fishing, sea mammal hunting, and shellfish gathering were important food-procurement activities for the Indians living on the coast and the Channel Islands. Hugo Reid observed that "fish, whales, seals, sea-otters, and shellfish, formed the principal subsistence of the immediate coast-range of Lodges and Islands" (Reid 1852:22).

The Gabrielino took both shallow-water and pelagic (deep- water) fishes. In coastal bays and inlets shallow-water fish such as leopard shark, gray smoothhound, shovelnose guitarfish, bat stingray, California halibut, spotted sand bass, and slim midshipmen were taken with hook and line (Follet 1966:189). Using plank canoes the Gabrielino could also fish the rich kelp beds found along the coast and near the islands; here Gabrielino fishermen could take tuna such as bonito, yellowtail, albacore, yellowfin, bluefin, and skipjack. Other fish taken by the Gabrielino include white croaker, white sea-bass, and rockfish (Landberg 1965:70; Galdikas-Brindamour 1970:146; Ross 1970; Butler 1974:18; Craib 1982:22).

Shellfish were an important food source for the Gabrielino, especially during the winter months when plant foods were scarce. Commonly collected types include pecten, *Chione*, *Haliotis*, oyster, limpets, clams, and octopus (Vizcaino 1959:15; Galdikas-Brindamour 1970:144,145; Bates 1972:8). Jose de los Santos Juncos remembered that "at Newport [there] used to be lots of white clams" (Harrington 1986:R104 F96). Marine and shore birds such as cranes, gulls, ducks, and geese also formed an

important element in the Gabrielino diet. These birds could be taken with bows and arrows, slings, nets, or traps (Landberg 1965:76,77; Harrington 1942:15).

Although some fishing could be done from the shore, deep-water fishing required seaworthy vessels. The most impressive of the watercraft used by the Gabrielino was the plank canoe, or *te'aat*. Plank canoes were used by the Chumash Indians as far north as Point Conception, and by the Gabrielino as far south as San Clemente Island (Vizcaino 1959:16; Landberg 1965:38). In 1769 Father Juan Vizcaino wrote that the Gabrielino canoes "would hold seven men" and

> were made of planks of wood, about one finger thick, and in pieces sewed together and tarred on the outside. One of the Indians was ever bailing out the water that enters . . . the oars are two pieces of wood and they stroke to one side, and the other, with much agility [Vizcaino 1959:16].

The *te'aat* was made of wooden planks carefully shaped and fitted together. The planks were first glued in place with tar and then "sewn" with stitches of vegetable fiber threaded through holes drilled into adjoining planks. A replica of a Chumash *tomol*, which in design closely resembled the Gabrielino *te'aat*, was built in Santa Barbara in 1976. This vessel, 27 feet in length, was capable of six to eight knots during favorable wind and swell conditions (Hudson et al. 1978).

Other watercraft used by the Gabrielino included dugout canoes made from a willow or cottonwood log hollowed by burning with hot coals and then shaped using hand adzes. Dugouts were used on quiet bodies of water and were poled or paddled from place to place (Hudson et al. 1978:31-36).

Boats made from lashed bundles of tules were utilized for shore and ocean travel. Pedro Fages wrote that "they have their rafts of reeds . . . and by means of these the Indians of the plain of San Gabriel communicate with the islanders of San Clemente and Santa Barbara" (Fages 1937:23). A replica of a tule canoe built by the Santa Barbara Center for Archaeological Preservation, Research, and Education in 1979 was 18 feet long and 3 feet wide. It could support a payload of 470 pounds and averaged a speed of 2 miles per hour (Hudson et al. 1978; Hudson and Blackburn 1982).

When fishing from canoes the Gabrielino used spears, harpoons, and tridents. In 1602 Father Antonio de la Ascension observed the Gabrielino using long, slender poles

> for their fishing, as our people do harpoons. At the end of the pole they fasten a harpoon made of fishbone, and to this they tie firmly a long strong line like twine. Carrying these in their canoes, when they see... some large fish... they strike them with these harpoons... they give it the line if it is a large one, and follow it, little by little nearing the beach, where they finish by killing it and drawing it on land. The small ones they at once raise into the canoe [Wagner 1929:236].

In 1769 Father Juan Vizcaino observed that "they carry shafts with harpoon points which they use in fishing. Each harpoon has three barbs" (Vizcaino 1959:16).

Harpoons used for fishing generally had points of wood or bone; those used for sea-mammal hunting were equipped with stone points. Harpoons were manufactured from ironwood or holly, with a foreshaft of willow or elder. Harpoon points could be unilaterally or bilaterally barbed. Retrieval lines as long as 300 feet were manufactured from horsenettle or red milkweed. Other fishing implements included simple spears comprising a straight wooden shaft with a barbed point of wood or bone (Hudson and Blackburn 1982).

Gabrielino fishermen used hooks of bone, shell, or cactus thorns. Circular fishhooks, made from bone or from abalone or mussel shell, operated by lodging in the mouth or stomach of bottom-feeding fish. Fishlines were attached to a groove or a small knob on the shaft of the hook and were held in place with tar. The glittering shell could serve as its own lure or could be baited with black mussel (Harrington 1942:7; Schumacher 1975; Hudson and Blackburn 1982). The Gabrielino also used gorges comprising two pieces of bone tied together in a V shape, as well as trolling decoys of abalone shell. Fish lines were made from surf grass, nettle, yucca fiber, or red milkweed, and rocks served as anchors (Hudson and Blackburn 1982).

Dip nets, gill nets, drag nets, and seine nets were used for fishing as well. Small bag-like dip nets were mounted on a circular or semi-circular hoop two or three feet in diameter. Gill nets, used for catching small fish such as sardines, had a one-and- a-half-inch mesh and were made from sea grass, surf-grass, and yucca. Gill nets were suspended vertically in the water so that small fish would become entangled in the fine mesh. Larger fish such as bonito were caught using drag nets drawn behind the canoes. These nets had a larger four-inch mesh and were six to eight feet long; they were made of milkweed or willow-fiber string (Hudson and Blackburn 1982).

Plant Gathering

The total number of plants gathered and used by the Gabrielino is suggested by comparison with neighboring Indian groups. More than 200 species of plants were used by the Cahuilla as food or in medicines and crafts (Bean and Saubel 1972; Bean 1972:36). Similarly, more than 100 species have been documented for the Luiseno and 150 different species for the Chumash (Sparkman 1908:228-234; Kroeber 1925:649-651; Landberg 1965:77-81; Timbrook 1990). The actual number of plants once used by each of these groups undoubtedly exceeded what has been documented.

Plants not only served the Gabrielino as a source of food and medicines but also provided a versatile resource for manufacturing and crafts. For example, trees were used to manufacture house frames, bows and arrows, plank canoes, harpoons, spears, bowls, dishes, and platters as well as other items. Tules, or bulrushes, were used to make houses, reed canoes, and matting, as well as baskets and other containers. Hemp, milkweed, or nettle were used to make two-, three-, or four-ply cordage (Harrington 1942:24,25; Hudson and Blackburn 1987). Nettle, willow-fiber, milkweed, seagrass, and yucca-fiber were used to manufacture nets and fish lines, and soaproot was used to make brushes (Reid 1852:44; Hudson and Blackburn 1982; Harrington 1942:12).

Early writers provided some information on Gabrielino plant usage. According to Pedro Fages the Gabrielino collected

> seeds, pine nuts, madrona berries, acorns, etc.
>
> Cactus fruit of superior flavor, wild grapes, and brambleberries abound in the country... there are many willows, from the fruit of which in season the Indians know how to make a certain wine which has no unpleasant flavor. The mountaineers know how to make also a kind of sweet paste, and sugar.... They utilize the *tule* (cattail reed), making atole --gruel-- from the seeds, and bread from the roots [Fages 1937:22].

Hugo Reid noted that acorns were crushed and made into "a sort of mush" that was "eaten when cold."

> The next favorite food was the kernel of a species of plum which grows in the mountains and Islands, called by them, *Islay* (pronounced eeslie). Some Americans call it the

> *Mountain Cherry... Chia*, which is a small, gray, oblong seed, was procured from a plant apparently of the thistle kind... Pepper grass seed was also much used, the tender stalks of wild sage, several kinds of berries and a number of roots [Reid 1852:22,23].

Acorns were consumed by California Indians from Mexico to Oregon; in fact, the effective utilization of the acorn as a food resource has been cited as an important factor in the development of sedentary hunting-gathering cultures in California. Much of this importance stems from the acorn's high nutritional value. The acorn is superior to corn and wheat in fat and fiber content, equivalent in carbohydrates, and inferior only in ash and protein (Merriam 1918; Bean and Saubel 1972:121,122).

The key to the successful utilization of the acorn was a technique for leaching out the tannic acid that is naturally present in the nut, thereby increasing the flavor and digestibility of the meat (Merriam 1918:136; Gifford 1936:302,303). Hugo Reid described the leaching process used by the Gabrielino.

> Acorns, after being divested of their shell, were dried, and pounded in stone mortars, put into filterns of willow twigs worked into a concave form, and raised on little mounds of sand, which were lined inside with a coating of two inches of sand; water added and mixed up. -- Then filled up again and again with more water, at first hot, then cold, until all the tanning [tannin] and bitter principle was extracted. The residue was then collected and washed free of any sandy particles it might contain. On settling, the water was poured off. After being well boiled, it became a sort of mush, and was eaten when cold [Reid 1852:22,23, brackets in original].

October expeditions to harvest acorns were a time of intense communal effort. The men climbed the trees and shook the acorns free while the women and children collected them (Bean 1972:37). Some acorns might be processed on the spot, while others were transported back to the town for storage in large coiled granary baskets. During the summer these baskets stood outside the homes on raised platforms of lashed poles; in the winter they were moved inside (Harrington 1942:9; Hudson and Blackburn 1983).

Acorns were ground in wood or stone mortars and were cooked in watertight baskets. Water was brought to a boil by dropping in stones that were heated in a fire. Soapstone bowls were also used to cook acorns and could be placed directly over a flame. A wooden paddle was used for stirring (Harrington 1942:9,12; 1986:R105 F679,680).

The seeds of *Islay*, also known as Mountain Cherry, were ground into a meal and used in gruel (Harrington 1942:8). Hugo Reid wrote that it "formed a very nutritious, rich, saccharine aliment; and looked much like dry boiled frijoles" (Reid 1852:23). Chia (*Salvia columbariae*) was used not only by the Gabrielino but by the later Spanish and Mexican settlers. Chia seeds were harvested by bending the plant stalks over a flat, tightly-woven basket and brushing them with a fan-shaped seed beater of twined basketry (Harrington 1942:21; Hudson and Blackburn 1982). The seeds were roasted and ground into a flour which was eaten raw, cooked in gruel, or made into a drink (Harrington 1942:21; 1986:R102 F532, R105 F314; Hudson and Blackburn 1982). Jose de los Santos Juncos remembered that "Indians used to eat raw tender shoots of salvia. It made their tongues black" (Harrington 1986:R102 F764).

Roots and bulbs were an important part of the Gabrielino diet as well. In 1602 Father Antonio de la Ascension remarked that "in the island [Santa Catalina --W.Mc.] there is a great quantity of something like potatoes . . . which the Indians carry to the mainland to sell" (Wagner 1929:237). The leader of the 1602 expedition, Sebastian Vizcaino, also noted that "the women treated us to roasted sardines and a small fruit like sweet potatoes" (Bolton 1908:83). These bulbs, known as "cacomites" by the Spaniards, were most likely wild hyacinth (*Broadiae* sp.). J.P. Harrington's consultant Jesus Jauro remembered that "there are cacomites here in the hills. We used to eat them when children"

(Harrington 1986:R105 F317). Roots and bulbs were harvested using long, straight digging sticks which could be weighted and tipped with flint points for greater effectiveness. Roots were cooked by roasting or baking in earth ovens (Harrington 1942:9; Hudson and Blackburn 1982).

Other plant foods eaten by the Gabrielino include clover and wild sunflower seeds, pinyon nuts, cresses, celery, buckeye nuts, wild strawberries, laurel berries, mushrooms, and seaweed; J.P. Harrington specifically denied the use of mesquite and yucca or agave as food plants by the Gabrielino. Cholla seeds were eaten, and the pulp of the leaves was pounded until soft and were consumed as well. Wild tobacco was smoked for pleasure and as a sedative, or it was mixed with lime and swallowed as a purgative (Harrington 1986:R105 F571,573, R106 F195; 1942:8; Bean 1972:38-42; Landberg 1965:77-81).

Quarrying, Stone Working, and Pottery

One of the most notable economic pursuits of the Gabrielino was the trade in raw soapstone and finished soapstone goods which centered on the town of *Najquqar* at the isthmus of Catalina Island. Soapstone is a soft, easily worked rock containing varying amounts of the mineral talc; soapstone is also commonly known as talc, steatite, or serpentine. Soapstone's unique physical characteristics make it an ideal material for the manufacture of cooking vessels. It is soft enough to be carved and shaped using stone tools, yet due to its unique thermal qualities it resists shattering when placed over an open flame (Heizer and Treganza 1944:347).

The Gabrielino operated soapstone quarries on Catalina near the airport, in the "Valley of the Ollas" near Empire Landing, and in the vicinity of Little Springs Canyon; smaller quarry sites were scattered across the island. Paul Schumacher surveyed Catalina in the late nineteenth century and counted more than 300 quarry sites at the southeastern end of the island alone (Wlodarski 1979:337,338; Schumacher 1878;1878b).

Soapstone was quarried from both surface and subsurface deposits; the latter were reached by digging open-pit mines that might reach 40 feet in diameter and 4 feet in depth. Blade-like picks of slate hafted to wooden handles were used in mining, although following the arrival of Europeans iron utensils were introduced (Meighan and Johnson 1957:27).

The stone working techniques employed by the Gabrielino depended upon the raw material being used and the item being manufactured. Stone edge tools such as knives and points were manufactured using percussion and pressure-flaking techniques (Harrington 1942:13). Large pots, bowls, and mortars were shaped using a specialized technique that minimized production time and reduced the chance of breakage during manufacture. First, a circular groove was cut into one end of a stone blank to create a large knob. This knob was then sectioned into four quarters which could be easily and safely broken off the blank. By continuing this process the vessel could be hollowed, with the final shaping accomplished by chipping (Bryan 1970).

Although soapstone was the material of preference for cooking utensils among the Gabrielino, ceramic vessels were also manufactured and used. Fragments of ceramic vessels have been recovered from archaeological sites within the Gabrielino territory and appear to be a locally-produced version of a type of pottery known as "Tizon Brown Ware" (Hudson 1969:47; Lauter 1977; Koerper and Flint 1978; Craib 1982:54,66; Taylor and Douglas 1982).

According to J.P. Harrington, spheroid vessels as large as eight inches in diameter at the belly were produced from coiled clay which was smoothed and shaped using a paddle on the outside and a smooth pebble on the inside. The completed vessel was fired in an open bark fire (Harrington

1942:25). The Gabrielino may have learned these manufacturing techniques from the Cahuilla, Serrano, or Luiseno (Hudson 1969:47; Koerper et al. 1978).

Smoking pipes were also manufactured from fired clay. In 1769 Father Juan CrespiGabrielino living near the Los Angeles River smoking pipes of clay. According to Father Juan "some of the old men were smoking pipes well made of baked clay and they puffed at us three mouthfuls of smoke" (Bolton 1927:147).

The Gabrielino also used clays and other minerals to make paint pigment. These included red ochre, kaolin (a white mineral), charcoal, manganese (obtained from the Cahuilla), and mineral stones containing lead found on Catalina Island (Wagner 1929:237; Martinez 1938:52; Harrington 1942:18; Meighan and Johnson 1957:26; Vizcaino 1959:14). The Fernandeno used local deposits of hematite and limonite for pigment, the former producing a red color while the latter varied from yellow to dark brown. Hematite was also recovered from Big Dog Cave on San Clemente Island (Lee 1981:25; McKusick and Warren 1959:132).

Pigments were crushed in small mortars and mixed with a binder such as animal fat to produce a paint with permanent adhesive qualities (Hudson and Blackburn 1985; 1987). Boulders, rock outcroppings, and rock shelters provided permanent sites for rock art, while small stones provided more portable surfaces.

GABRIELINO POLITICAL ORGANIZATION

Lineages and Leadership

Gabrielino society was organized into kinship groups known as lineages, which consisted of numerous individual families that traced their origin to a common ancestor. Membership in a lineage was traced through the father. Through membership in a lineage an individual gained access to lineage-owned resources such as seed-bearing fields and oak groves (Bean 1972b:xvi; Bean and Smith 1978:547).

When a lineage became too large to remain politically or economically stable, it divided to become two separate lineages, one of which then migrated to a new territory. In describing this process Father Boscana noted that "as they were to change their place of residence they were necessarily obliged to alter their mode of speech as well as their customs, in order to become a distinct nation" (Boscana 1933:85).

Lineages were grouped into two divisions which anthropologists refer to as "moieties." The organization of lineages into moieties seems to have evolved after the Uto-Aztecans entered southern California, and it is possible that it first developed among the Gabrielino (Bean 1972b:xv; Strong 1929:344). Every lineage belonged to one of two moieties known as "wildcat" and "coyote" (Harrington 1942:32). Each moiety possessed a portion of the components required for a ritual performance, that is, the songs and paraphernalia that were necessary for a successful ceremony. For this reason moieties joined together for ritual performances which were hosted on a reciprocal basis. The ritual-political-economic alliances that were formed through these ceremonies are known as "ritual congregations" (Bean 1972:151-153).

Gabrielino communities were composed of one or more lineages united under a chief, who was known as the *tomyaar* and who was the chief of the oldest or largest lineage residing in the community (Harrington 1942:32; 1986:R102 F642; Taylor 1860; Temple 1960:166). The *tomyaar* served as the chief

administrator, financial officer, religious leader, legal official, and commander-in-chief. A man was normally 30-35 years of age when he took on the responsibilities of the *tomyaar*, at which time he received a new name consisting of the name of the community "followed by *ie*, with sometimes the alteration of one or more final letters" (Reid 1852:9). *Tomyaars* may have worn ankle-length capes of animal skins as a mark of office (Hudson and Blackburn 1985).

The office of *tomyaar* descended from father to eldest son or, in the absence of a direct descendant, to the nearest male relative. Sometimes the firstborn son of the *tomyaar's* daughter might be proclaimed leader, although the nearest male relative would act as regent (Boscana 1933:42; Harrington 1942:33). Female *tomyaars* were also known. Jose de los Santos Juncos remembered "old Luisa who died in Los Angeles long ago [who] was a capitana at San Gabriel" (Harrington 1986:R102 F654; also 1942:33; Boscana 1933:83-85).

Some *tomyaars* may also have held authority as provincial leaders. According to J.P. Harrington, during the Mission period a Fernandeno chief "Odon . . . was the chief of all the Indians at the SW end of the [San Fernando] valley. Rogerio [Rocha]...was chief at San Fernando" (Harrington 1986:R106 F111, comments in brackets by W.Mc.). The Gabrielino rancheria of *'Ahwiinga*, located near La Puente, may also have been ruled by a provincial *tomyaar*. According to an entry in the baptismal records of Mission San Gabriel translated by Thomas Workman Temple II, a *tomyaar* named Matheo, "whom the other rancherias regard as their chief was baptized June 6, 1774, at the age of thirty-five or six" (quoted in Johnston 1962:143). Finally, Jose Zalvidea noted that the name *Xuuxonga*, which applies to a rancheria located on the Palos Verdes peninsula, "means principal or ruling place," suggesting the possibility that this was yet another regional capital (Harrington 1986:R102 F392).

The most crucial of the *tomyaar*'s secular responsibilities involved the management of the community food stores. Hunters were required to deposit a portion of their catch in the community reserve, as were those who gathered plant foods. This surplus food was used to feed the poor, avert food shortages, and host festivals. Mismanagement of the food reserve was a grave offense that might be punished by execution (Boscana 1933:39,44).

Another of the *tomyaar's* economic responsibilities was the management of the ritual shell-bead exchange networks that united various lineages and communities. These networks extended across language groups to unite the Gabrielino with the Cahuilla, Serrano, Chumash, Salinans, and others. One of the oldest of these networks united the Cahuilla, Serrano, Luiseno, and Gabrielino lineages from San Gorgonio Pass to the Pacific Ocean (Bean 1972:152,153; 1974:17; Strong 1929:98).

Rituals were coordinated among these groups using strings of shell-bead money, as well ceremonial implements such as staffs decorated with quail and eagle feathers, and wooden wands tipped with quartz crystal. Among the Cahuilla, for example, a lineage hosting a mourning ceremony would send strings of shell-bead money to other lineages to invite them to the ceremony. In turn, when visiting lineages held their own ceremonies they invited their former host (Bean 1972:137). Breakdowns in this system of reciprocity could lead to very serious consequences; Father Boscana noted that war often resulted "when a chief neglected to return the customary present at their festivities" (Boscana 1933:69).

The *tomyaar* formed alliances with other chiefly families by marrying the daughter of the allied chief; partly for this reason *tomyaars* commonly had more than one wife (Bean 1974:25). Such alliances were critical during times of war and food shortage, when they supplied avenues for the exchange of surplus food. In addition to the above-mentioned duties the *tomyaar* also acted as arbiter in the resolution of legal disputes and as war leader during times of conflict (Reid 1852:15,16; Boscana 1933:43).

Much of the *tomyaar*'s prestige and authority derived from his possession of supernatural power. As the primary religious leader the *tomyaar* was responsible for maintaining the "sacred bundle" of ceremonial objects and for scheduling the dates of religious rituals (Boscana 1933:43; Harrington 1986:R105 F99). The *tomyaar*'s authority was further enhanced by his ritual association with the "first chief" *Wewyoot* and the supernatural being Eagle.

According to a missionary from San Fernando "the first Indian settlers came here from the north and were led here by a captain general who they declare lives on an island and to whom they attribute life without beginning or end" (Geiger and Meighan 1976:93). Hugo Reid told of

> a *remarkably clever, industrious man,* chief of a large tribe... who, when dying, told his people that he intended becoming an eagle, and that he bequeathed them his *feathers*, from henceforth to be employed at their feasts and ceremonies [Reid 1852:20, italics in original].

The *tomyaar* served as intermediary with the supernatural world by assuming the identity of Eagle. In ritual performances the *tomyaar* wore a ceremonial skirt of eagle feathers and performed dances symbolizing his soul's magical flight to the supernatural world. The feathers for the ceremonial skirt were obtained from a bird sacrificed at the Eagle Killing Ceremony, which, according to tradition, was first held following the death of *Wewyoot* (Boscana 1933:57; Strong 1929:309; Merriam 1955).

The *tomyaar* was advised by a Council of Elders which consisted of the leaders of the other lineages in the community as well as various "bureaucrats" and influential individuals. Membership on the council was hereditary, passing from father to son, and council members were usually forty years of age or more. Sometimes the *tomyaar* himself served on the council before taking office, and often the other members of the Council were relatives of the chief.

Important Council members included the *paxaa*, or assistant cult chief, who served as an announcer, treasurer, and general assistant, and who delivered lectures to the community on morality. Other members were a *maanet* official, who prepared the hallucinogenic *Datura* drink for important ceremonies, a firetender who assisted at ritual gatherings, a rabbit drive official, storytellers, and messengers (Harrington 1942:33; 1986:R105 F388; Heizer 1968:118,119, note 54). Hugo Reid wrote that "boys were trained to carry messages from one chief to another.... It required a retentive memory" (Reid 1852:40).

The *taakwa*, another important official, managed the funeral and mourning ceremonies as well as the distribution of food obtained during communal hunts (Harrington 1942:33; 1986:R105 F388). The *taakwa* also played an important role in the funeral ceremonies held for a deceased *tomyaar*, for it was the *taakwa's* duty to ingest a small portion of muscle from the shoulder or neck of the dead leader. According to Father Boscana this was performed out of devotion to the deceased leader and allowed his spirit to rise to "the heaven of stars," and if the ceremony was not performed "they did not go to the stars but to another place, to which they were destined by Chinigchinich" (Boscana 1933:77).

Gabrielino Shamanism

Shamans played an integral role in the political, economic, legal, moral, and religious affairs of every community. The shaman served society as doctor, psychotherapist, philosopher, intellectual, and mediator with the supernatural world (Bean 1976; Reid 1852:32). Like the *tomyaar*, the shaman owed his influence to his possession of supernatural power; in fact, many *tomyaars* were also shamans (Bean 1974:25; 1976). Hugo Reid (1852:27,55) told of a *tomyaar* from Santa Catalina Island named Canoa who was "accounted a great wizard" and another from *Muuhonga* "who was a great wizard and enchanter."

Women, too, were capable of becoming shamans. Father Boscana pointed out that there were "men, and also females, who are believed to possess the power of enchantment to such a degree that no one can withstand their powers" (Boscana 1933:61). One Gabrielino woman shaman named Toypurina was responsible for leading a revolt against Mission San Gabriel in 1785 (Temple 1958).

According to J.P. Harrington there were four primary types of shaman, each possessing a different type of skill and level of power. The most powerful "has his medicine... within him, and he can extract this medicine through his mouth in an instant and use it for killing anything" (Harrington 1933:195, note 199). This type of shaman was capable of transforming himself into a were- animal; Hugo Reid noted that they "changed themselves into the form of divers animals" (Reid 1852:32).

Harrington's Gabrielino notes contain several fascinating accounts of shamans transforming themselves into bears. Jose de los Santos Juncos told of Valencio who was

> Muy hechicero [a great sorcerer]. He turned into a bear at times & went in mts. [mountains] or anywhere para matar res [to kill cattle]...
>
> One time he went up [the] other side of Sandy Sloop... He went like people -- in human form looking to see where he would find a res to get & then he would turn oso [bear] & catch it secretly...
>
> A big oso del monte [mountain bear] came out on him. He seized 2 stones & when [the] bear was near V. turned [into a] bear and sprang on him & the two grappled [and]... V. hit [the] other bear with a stone in [the] head... and [the] bear... left him grunting for his head was broken... V. killed a res as soon as it grew dark & carried the meat home in his carrying net. Thus he did the whole time.
>
> All the Mexicans got to know him & all the Ind's [Indians] feared him.... Wherever he went the Ind's gave him atole, pinole, wine, all, for they feared him [Harrington 1986:R105 F562, comments in brackets by W.Mc.].

Island shamans were held in special awe, for it was believed that they could live for 200 or more years and had the strength to bend strong trees (Roberts 1933:4). Jose de los Santos Juncos noted that the islanders "used lobos del mar [sea wolves --W.Mc.] to kill people. People here used yerbas [herbs] but [the] islanders were [the] worst hechiceros [sorcerers]" (Harrington 1986:R104 F005).

The second type of shaman used preparations of herbs, magical paraphernalia, carved effigies, or painted figures to control supernatural power (Harrington 1933:196, note 199). Thus, the Gabrielino probably drew a distinction between the type of shaman who could actually transform himself into a bear and one who merely used a magical bear costume (Blackburn 1975:40; Hudson and Blackburn 1985).

The third category of shaman were those who used second sight, while the fourth was the hypnotist (Harrington 1933:195,196, note 199).

Shamans enhanced their political influence by banding together into associations that cut across political and language boundaries. Such associations allowed the shamans to control the induction and training of new candidates and established a code of conduct for their profession. Members found guilty of abusing supernatural power could be punished by de-professionalization and even execution; Hugo Reid reported that if a shaman abused his authority "the chief had no jurisdiction over him... But other seers could do him the damage they saw fit" (Reid 1852:17).

Gabrielino shamans banded together in an organization known as the *yovaarekam*, a reference to the *yovaar* or sacred enclosure; Gabrielino shamans also participated in the Chumash association known as the *'antap* (Hudson and Blackburn 1978). Although few details are available for the *yovaarekam*, it is known that the *'antap* was organized into two separate groups, the *'antap* proper and the *shan*. The *'antap* consisted of community leaders who worked together as a regional assembly to conduct important rituals and ceremonies and advise provincial leaders. Members of the *shan* traveled through the provinces gathering important information and relaying it back to the *'antap* (Hudson and Underhay 1978:29,30).

Young men or women who wished to become shamans were required to complete a rigorous apprenticeship, during which they were tested not only by other shamans but also by supernatural beings. In cultures throughout the world, shamanic initiation is a process involving numerous trances during which the apprentice undergoes ritual death and rebirth; the successful candidate is thereby transformed into a new being capable of possessing and managing supernatural power (Bean 1976; Eliade 1951:33,34).

Each shaman possessed a guardian spirit that dwelled within his body, specifically within his heart, and which he received from another shaman who served as his sponsor. The sponsor could produce this spirit through his mouth, whereupon the apprentice shaman swallowed it or touched it against his neck or chest and thereby acquired its powers for life (Harrington 1933:161,162, note 123). A guardian spirit could be an animal spirit, a supernatural creature, or a natural force like thunder or lightning; especially powerful shamans might have more than one guardian spirit. During a trance the shaman received instruction from this guardian spirit (as well as other supernatural beings) in such important areas as supernatural knowledge and power and ritual techniques (Bean 1976).

Shamans made use of a number of ritual techniques to bring about the trance that allowed them to contact the supernatural world. The most important of these was ingestion of a hallucinogenic drink made from the dried root of *Datura wrightii*, or Jimson Weed. *Datura wrightii* contains a number of powerful alkaloids which bring about hallucinations of flying, frenzied dancing, and bodily dissolution. The ritual use of *Datura,* also known as thornapple, has been documented among societies in Asia, Africa, medieval Europe, and North America (Harner 1973:128-140; Armstrong 1986). Other techniques of intoxication used by the Gabrielino included ingestion of a mixture of tobacco and lime, called *peeshpevat*, and swallowing live poisonous red ants (Geiger and Meighan 1976:89; Harrington 1986:R103, F522; Reid 1852:36; Blackburn 1976).

Shamans used a variety of implements as ritual paraphernalia including feather skirts and headdresses; wooden wands inlaid with shell and tipped with flint blades or quartz crystals; forehead ornaments made of flat boards painted red and decorated with rattlesnake rattles; collars of beads, stones and bear claws; headbands of hair; and various types of stones. Among the most important of these were *toshaawt* stones, iron concretions which occur naturally on San Nicolas Island (Boscana 1933:57; Heizer 1968:123,124; Merriam 1955:80; Harrington 1986:R105 F563; Howorth 1988; Heizer 1955:198). Other items of ritual paraphernalia included pipes of stone or clay, cigar-shaped "charmstones," ritual plaques of soapstone, and effigies of whales, birds, fish, mammals, canoes, and various abstract shapes carved from soapstone (Bolton 1927:147; Heizer 1968:123,124; Hudson and Blackburn 1986; Moriarity 1982; Hoover 1973; Pond 1968; Cameron 1990). Intact shaman's kits have been recovered from archaeological sites in Pacific Palisades, Goff's Island near Aliso Creek, and San Nicolas Island (Wallace 1987; Winterbourne 1967; Lee 1981).

Shamans deliberately nurtured a public image of power and influence to inspire obedience and respect, and for this reason they made elaborate displays of magical power. This public image enabled them to serve as important instruments of social control and enforce the laws and teachings of *Chengiichngech*. Shamans were also believed to be capable of preparing a variety of poisons, controlling the weather, causing earthquakes, and witching enemies from a distance. Jose de los Santos

Juncos told of a "kind of poison powder which a man carried, e.g., in his belt and poisoned Indians with it when [a] breeze blew from him to someone. . . . [They] also put it in the food and thus poisoned their enemies" (Harrington 1986: R102 F736).

The Gabrielino shaman possessed an extensive body of knowledge concerning astronomy and cosmology, and he was responsible for scheduling the dates for ceremonies and religious observances (Reid 1852:32; Boscana 1933:43). Shamans used two types of calendars, a lunar calendar for days and months and a solar calendar for long periods of time (Reid 1852:39; Heizer 1968:118,119). Observations of the moon and the changing positions of constellations near the horizon before sunrise were used to correct and maintain these calendars (Harrington 1942:29; Hudson and Underhay 1978).

Shamans were responsible for preserving the sacred and historical knowledge contained in the oral literature, and certain individuals were trained to memorize long stories and orations and repeat them word for word (Heizer 1968:118,119). Shamans also represented the highest level of medical expertise in the Gabrielino community. Medical treatment was a holistic approach that utilized medicines (prepared from a variety of plant, animal, and mineral resources), minor surgery, massage, and sweating, as well as hypnosis, rest, the re-establishment of emotional harmony, and the re-integration of the patient with the community (Bean 1976; Boscana 1933:71; Geiger and Meighan 1976:72,73; Reid 1852:32,33).

Serious illnesses were diagnosed by the shaman through the use of magical flight. During the trance the shaman would consult with supernatural beings to determine the cause of the disease and its cure. Magical flight was also used to detect witchcraft, which often involved the intrusion of a foreign object (such as a splinter or stone sent by an enemy shaman) into the patient's body.

Object intrusion could only be treated by a curing shaman, known as *'ahuuhvorot*, who used a technique known as "sucking." Father Boscana described the sucking technique, in which a shaman placed feathers on the patient's head "and encircled him entirely with these and other articles. . . . After this, one of them applied his lips to the part affected . . . to draw from it by suction the particles which they had stated as being within, and exposed them to all present" (Boscana 1933:72).

Social Classes

Archaeological and ethnographic evidence suggests that Gabrielino society comprised a number of hierarchically-arranged social classes (Bean and Smith 1978:543; Finnerty et al. 1970:18; Galdikas-Brindamour 1970:136). Class membership was based upon an individual's wealth and ancestry and played an important role in determining lifestyle. Three primary social classes can be distinguished including the elite class, the middle (or bureaucratic) class, and the commoners. There is also evidence for the existence of two other classes at the lower end of the social scale. These are the poor and beneath them the slaves and social outcasts (Bean 1974:22; Boscana 1933:70).

The elite class comprised the most politically and economically active members of the community and included the *tomyaar*, the shamans, and the Council of Elders. Members of the elite class inherited their wealth; they also were supported in large measure by the gifts and payments they received for services they rendered to the community. The elite may have been distinguished by special clothing styles. For example, the length of the hide cape worn by a man may have been determined by his social class (Fages 1937:32; Hudson and Blackburn 1985).

Members of the elite possessed extensive social, political, and economic ties with other communities and therefore had much greater mobility than members of the lower classes (Bean 1974:29). They often spoke a refined language, which Hugo Reid (1852:14) described as "court

language," and they participated in rituals not open to the general public. Only the *tomyaar* and other members of the elite could enter the *yovaar*, or sacred enclosure, and "those who entered would be called Tobet, and the remainder of the people, Saorem" (Boscana 1933:34). Religious knowledge was only communicated to certain boys when they underwent the rite-of- passage ceremony. As Father Boscana noted, "when they reveal anything to their children, it is only to such as they intend to rear for their successors, and these are enjoined to keep fast the secrets" (Boscana 1933:17).

The Gabrielino middle class provided the bureaucrats (a managerial or administrative group consisting of the council of elders, messengers, and ritual officials), craftsmen, and skilled professionals that helped Gabrielino society function politically and economically. The patronage of the elite was important to the middle class and could provide enhanced social mobility. Talented or skilled craftsmen who earned the patronage of the elite might eventually be chosen to fill bureaucratic positions (Bean 1974:22,23).

Commoners, on the other hand, did not possess the advantages of the elite or middle class. They did not inherit wealth, they could not participate in the higher levels of religious knowledge, and they did not have the extensive social, economic, or political ties which gave the elite social mobility.

Beneath the commoners were the poor, who were often social outcasts and suspected of being dishonest and irresponsible (Bean 1974:30). Further yet down the social scale were slaves taken in battle. These were primarily women and children, for warriors were decapitated upon capture or were taken prisoner for later torture and execution. Slaves were sometimes ransomed (Boscana 1933:70; Reid 1852:15).

Homosexuals and transvestites formed a subgroup within Gabrielino society and might come from any of the social classes. Prostitution reportedly occurred among the Gabrielino, although little is known beyond the fact of its existence (Bean 1974:23; Boscana 1933:54; Harrington 1942:31).

Laws and Conflict Resolution

The Gabrielino had extensive laws and codes of behavior, many of which were contained in the precepts taught by *Chengiichngech*. Father Boscana noted that *Chengiichngech* taught the elders how to raise the youth, "as well as in the rules they were to observe." After he died *Chengiichngech* ascended to the stars to watch over his people, warning "those who obey not my teachings... I shall punish severely. I will send unto them bears to bite, and serpents to sting them; they shall be without food, and have diseases that they may die" (Boscana 1933:34).

According to Hugo Reid (1852:15,16) murder was a rare occurrence among the Gabrielino and robbery was unknown. Murder, incest, mismanagement of the community food reserve by the *tomyaar*, and violations of the protocol governing behavior within the *yovaar* were all punishable by execution (Reid 1852:15,16; Boscana 1933:46). Execution was accomplished by shooting with arrows or perhaps by burning alive. Lesser offenses were punished by the assessment of fines in food, skins, or shell-bead money; whipping was never used (Reid 1852:15,16,54; Boscana 1933:39,46,88).

Although a husband who caught his wife in an act of adultery was free to kill or wound her, more generally the two men exchanged wives. The dishonored husband was free to take the wife of his spouse's lover, and the exchange was regarded as legal and not subject to appeal (Reid 1852:16).

Reciprocity was vigorously enforced, especially with regard to food procurement. Hunters and fishermen deposited a portion of their catch in the community food reserve managed by the *tomyaar*,

thereby alleviating the worst affects of food shortages and reducing stress within the community (Boscana 1933:43,62; Bean 1972:174,175).

The *tomyaar* was the final judge and arbiter of disputes, and he was assisted in these duties by the Council of Elders; legal decisions were announced to the community by the *paxaa'* (Reid 1852:15; Boscana 1933:42,43). If a death sentence was passed the *paxaa'* went through the town

> crying most bitterly... saying that "so and so has said or done this or that to our captain;" that "Chinigchinich is very angry and wishes to chastise us by sending upon us a plague, or which we may all die. Arm yourselves, then, both old and young, to kill the offender, so that by presenting him dead to Chinigchinich he may be appeased and not kill us" [Boscana 1933:43].

After a criminal was executed his body was carried to the sacred enclosure so that *Chengiichngech* could witness the punishment. Later the parents of the deceased were free to claim the body (Boscana 1933:43).

Those who were sentenced to death by the *tomyaar* and the Council of Elders could escape punishment by seeking sanctuary within the *yovaar*. Regardless of the offense, if the accused reached the *yovaar* safely he was free to depart without fear of retaliation. The punishment could then be directed against his relatives and descendants, however, and carried out until the entire sentence was completed (Boscana 1933:39).

Conflicts and disputes that arose between rancherias were resolved by joint action of the *tomyaars*; or, if they were unable to reach agreement, a decision was rendered by a third, impartial *tomyaar* (Reid 1852:15,16). However, if the conflict involved a grave offense (such as witchcraft), or if negotiations failed to resolve the dispute, war might be declared.

A declaration of war could be made for a variety of reasons, including robbery, sorcery, revenge for insults, kidnapping of women, trespassing on lineage-owned hunting and gathering areas, and failure to observe the obligations of the reciprocity system. It should be noted that Hugo Reid's comment concerning the rare incidence of robbery probably referred to its occurrence within the same lineage or rancheria. The decision to declare war was made by the *tomyaar* after consultation with the Council of Elders, and gifts would be sent to allies if reinforcements were thought necessary. A crier summoned the people to a general meeting at the *tomyaar's* home, where the men were ordered to prepare their weapons and the women were instructed to make food. When a date for the attack was decided, a second meeting was held and a formal declaration of war was announced (Bean and Smith 1978:546,547; Boscana 1933:69,70).

Weapons of war included bows with arrows dipped in poison, clubs, and slings. Fighting was generally hand to hand, although ambush was probably used whenever possible. Homes were fired by tossing burning brands onto the rooftops. During the battle, women and children gathered up enemy arrows for reuse by their own troops, while shamans treated the wounded. Warriors captured on the battlefield were decapitated or were taken away for later torture and execution. Captured women and children were taken as slaves (Bean 1972:130; Bean and Smith 1978:546; Harrington 1942:14,15; Boscana 1933:70; Reid 1852:15).

GABRIELINO RELIGION AND RITUAL

Elements of Gabrielino Religion

The Gabrielino were a deeply religious people whose lives were thoroughly imbued with ritual and ceremonialism. Gabrielino religion evolved over many generations through the fusion of several distinct currents of religious thought. Some of the elements contributing to this religion were the beliefs and practices of the pre-Uto-Aztecan peoples of the Los Angeles area; the beliefs and rituals of the Uto-Aztecans themselves; the highly developed *'antap-yovaar* religion of the Gabrielino and Chumash; and the *Chengiichngech* religion which originated in the town of *Povuu'nga*.

Other potential influences on Gabrielino religious thought and development include the elaborate religious systems of the agricultural societies of Arizona and New Mexico and, during the historic period, elements of Christianity. Each of these elements was refined and incorporated into a system of beliefs and rituals known as the *Chengiichngech* religion (Hudson and Blackburn 1978; Strong 1929:346-349; Kroeber 1925:622-624,645).

The Gabrielino were generally unwilling to divulge information about their religion to outsiders, and this secrecy resulted in the loss of a great deal of data on Gabrielino rituals and beliefs. Father Boscana remarked that "a veil is cast over all their religious observances and the mystery with which they are performed seems to perpetuate respect for them" (Boscana 1933:17). Nonetheless, by combining data on Gabrielino religion with information obtained from neighboring groups a general picture of Gabrielino religion can be developed.

The Chengiichngech Religion

One aspect of Gabrielino religion that has particularly fascinated scholars is the emergence of the *Chengiichngech* religion. Some researchers have suggested that this religion is a relatively recent phenomenon, stimulated perhaps by the influence of Christianity. A.L. Kroeber suggested that the prophet-spiritual being *Chengiichngech* was "a reaction formation . . . an imitation of the Christian God of the missionaries, whom they took over and furnished with a native name and their own beliefs" (Kroeber 1959:291). Another theory attributes this religion to the direct influence of Europeans who may have been stranded or shipwrecked along the California coast during the sixteenth century (White 1963:94,95).

It is the author's opinion, however, that the *Chengiichngech* religion evolved from pre-European religious elements and represents an indigenous religious current to which Christian elements were added later. This opinion is based on three factors: first, the rituals and ceremonies associated with the *Chengiichngech* religion are generally consistent with other Uto- Aztecan rituals and ceremonies; second, Gabrielino oral traditions represent the *Chengiichngech* religion as having evolved from the earlier *Wewyoot* beliefs; and third, many of the ceremonial elements of the *Chengiichngech* religion, including the *yovaar*, were in use at least as early as 1602, when they were observed on Santa Catalina Island by members of the Sebastian Vizcaino Expedition.

The primary features of the *Chengiichngech* religion in its final form included a pantheon of deities arranged beneath the supreme creator-god *Chengiichngech*; an elaborate cosmology; a religious elite that possessed knowledge and supernatural power not available to the general population; the maintenance of a sacred location (the *yovaar*) within the town; a strict code of morality; a sacred oral literature; and an extensive array of rituals and ceremonies.

The Gabrielino Pantheon

The supernatural beings of the Gabrielino world were arranged in a hierarchy of function and importance beneath the supreme creator-god, whose Juaneno name was *Chengiichngech* but who was also known by a number of other names. Hugo Reid observed that he was

> the maker and creator of all things, whose name was (and is) held so sacred among them, as hardly ever to be used: and when used only in a low voice. That name is *Qua-o- ar.* When they have to use the name of the Supreme Being on any ordinary occasion, they substitute in its stead, the word *Y-yo-ha-rivg-nain*, or "The Giver of Life" [Reid 1852:19].

Father Boscana reported that

> Chinigchinich was known under three distinct names: Saor, Quaguar, and Tobet... Soar means that period in which Chinigchinich could not dance; Quaguar, when enabled to dance; and Tobet, when he danced enrobed in a dress composed of feathers with a crown of the same upon his head and his face painted black and red [Boscana 1933:30].

Other names ascribed to *Chengiichngech* include *Ouiamot* (the "son of *Tacu* and *Auzar*") and *Attajen*, a name meaning "rational being." According to Boscana *Chengiichngech* came from the town of *Povuu'nga*, which J.P. Harrington located on Alamitos Bay (Boscana 1933:33; Harrington 1933:148).

Other less important deities recognized by the Gabrielino included *Wewyoot*, *Taamet*, *Chuuxoyt*, *Piichorot*, *Kwiichepet*, and *Maniishar*, which together make up a grouping referred to by anthropologist A.L. Kroeber as the "northern complex." These deities may have been associated with specific celestial objects, like the sun and moon, and certain stars (Hudson and Blackburn 1978:235,236). Celestial objects were sometimes depicted in religious art; for example, in 1602 Father Juan Vizcaino described the interior of the sacred enclosure as decorated with "a figure . . . painted in various colors. . . . At the sides of this were the sun and moon" (Wagner 1929:237).

Wewyoot is almost certainly the "grand captain" whose death preceded the first appearance of *Chengiichngech* (Boscana 1933:28,29,32,33; Hudson and Blackburn 1978:228,229), and who is closely associated in Gabrielino oral literature with the office of *tomyaar* and with the supernatural being Eagle. Hugo Reid told of "a *remarkably clever, industrious man*, chief of a large tribe . . . who, when dying, told his people that he intended becoming an eagle, and that he bequeathed them his *feathers*, from henceforth to be employed at their feasts and ceremonies (Reid 1852:20, italics in original). The missionaries at San Gabriel reported that "the first Indian settlers came here from the north and were led here by a captain general who they declare lives on an island and to whom they attribute life without beginning or end. This being apportioned to each tribe its land" (Geiger and Meighan 1976:93).

Taamet most likely refers to the supernatural being representing the sun (Kroeber 1925:623; Hudson and Blackburn 1978:228). The significance of Sun in Gabrielino religion is implied in the description of the *yovaar* quoted above and by the importance which the summer and winter solstices held in Gabrielino ritual (see below). Some researchers have also suggested that the title *tomyaar* is derived from the word *taamet*, implying that a ritual connection may also have existed between Sun and the office of the chief (Hudson and Blackburn 1978:228;see also note 2; Harrington 1986:R102 F491,568).

The Chumash conceived of Sun as a powerful anthropomorphic being who lived in a crystal house and spent each day circling the earth, torch in hand, collecting human beings to devour. Each night he played peon with Sky Coyote, and each year at the winter solstice their scores were tallied; if Sun was

the victor he took his prize in human lives the following year (Blackburn 1975:36,37; Hudson and Underhay 1978:51-53).

Chuuxoyt most likely represents the supernatural being Deer, also seen as Earth, the mother of mankind (Kroeber 1925:623; Hudson and Blackburn 1978:233, table 2). The Chumash knew Earth as a female supernatural being who provided all living things with food. Earth was honored each August in a celebration to give thanks for the successful gathering of wild plant foods (Hudson and Underhay 1978:45-48).

The identification of *Piichorot* and *Kwiichepet* presently remain unclear. *Piichorot* may have been equivalent to the male deity Morning Star; however, A.L. Kroeber translated the name *Piichorot* to mean "breath of life" (Hudson and Blackburn 1978:233, table 2; Kroeber 1925:623). *Maniishar* appears to have been derived from the word *maanet*, meaning *Datura*, suggesting a link between the supernatural being and the hallucinogenic plant. It is also interesting to note that the eldest daughter of the *tomyaar* held the title *Maniishar*, which implies a ritual connection between the deity and the chief's female descendant (Hudson and Blackburn 1978:228, table 2; Reid 1852:9; Kroeber 1925:623, table 2).

Other important supernatural beings appear in Gabrielino oral literature as the "first people," animal beings who once occupied the earth and who assumed their present form prior to the appearance of mankind. A special class of these animals known as the "*Chengiichngech* Avengers" were creatures sent by *Chengiichngech* to watch over mankind and punish those who broke his commandments. Jose de los Santos Juncos referred to these beings as the "*tf_tf_itf am*" and reported that they were the "sabes del mundo [wise ones of the world --W.Mc.] for that is what the name means. [They are] below God, whom the Indians knew as dwelling in the sky" and it is they "who rule the world" (Harrington 1986:R105 F559). Some of the animals that served as *Chengiichngech* avengers include bears, snakes, mountain lions, spiders, centipedes, and stingrays (Harrington 1933:135, note 54).

The raven seems to have been especially revered as one of the *Chengiichngech* avengers. While visiting Catalina Island in 1602 Father Antonio de la Ascension observed that inside the sacred enclosure

> there were two large crows larger than ordinary ones, which flew away when they saw strangers, and alighted on some near-by rocks. One of the soldiers, seeing their size, aimed at them with his harquebus [wheel-lock or matchlock rifle --W.Mc.], and discharging it, killed them both. When the Indians saw this they began to weep and display great emotion.

Father Antonio offered his opinion that "the Devil talked to them through these crows, because all the men and women hold them in great respect and fear" (Wagner 1929:237).

J.P. Harrington's Luiseno consultant Juan Sotelo Calac reported that

> there is no other animal except Raven that is Tca_. [*Chengiichngech*]... the Raven lives nobody knows where & comes to visit us at times. Raven is not a messenger of Tca_. but is Tca_. When he flies overhead avisando la gente [warning the people] they have to have a dance for him at once [Harrington 1986:R125 F746, comments in brackets by W.Mc.].

The foregoing statement suggests that, among some groups at least, Raven may have been regarded as a representation of *Chengiichngech*, rather than merely as one of his "avengers."

Some animals were believed to be helpers or protectors of mankind. For example, porpoises were believed to guard the world, their duty consisting of "going round and round the earth to see that all is safe" (Reid 1852:20). Other animal beings served as personal protectors or guardian spirits. Peregrine falcon, for example, was commonly believed to be a guardian spirit for canoe owners and fishermen (Applegate 1978:55).

Still other animal beings were regarded as distinctly malevolent. Most notable of these was *Taakwesh*, a cannibal spirit who dwelled at Lily Rock near Idyllwild. J.P. Harrington suggested that *Taakwesh* might be associated with ball lightning, an extremely dangerous and frightening meteorological phenomenon (Harrington 1933:180-185).

Gabrielino Cosmology

The Gabrielino and Chumash appear to have shared a belief in a universe composed of several parallel worlds placed one above the other. Some accounts mention as many as five such worlds, although the usual number is three (Blackburn 1975:30). The world of humans was the middle world, known to the Gabrielino as *Tovaangar*, meaning "the whole world." *Tovaangar* was fixed on the shoulders of seven giants; when the giants moved earthquakes occurred (Reid 1852:19; Blackburn 1975:30; Harrington 1986:R102 F566). The world above was known as *Tokuupar* (a word that also meant the color blue) and was home to supernatural beings such as Sun. When a shaman or *tomyaar* died his heart, which was the manifestation of his soul, rose to *Tokuupar* to become a star, planet, or comet (Reid 1852:67; Boscana 1933:27,77; Harrington 1933:115,116, note 35; 1986:R102 F570; Blackburn 1975:30; Merriam n.d.). Finally, the lower world was regarded as the abode of malevolent spirits, which the Chumash called *nunasis*, who were believed to wander the earth at night (Blackburn 1975:30).

The Religious Elite

Members of the religious hierarchy were chosen from the elite class of society; only members of the elite had access to the interior of the sacred enclosure and the highest levels of religious knowledge (Boscana 1933:34,38). According to the creation story related by Father Boscana, *Chengiichngech* separated the elite from the remainder of society and gave them the name *Toovet*, which corresponded to the name he took for himself when he donned the feather garments and danced the sacred dances (Boscana 1933:33,34). A loose translation of *toovet* might be "the initiated."

The remainder of the population *Chengiichngech* termed *Saorem*, or "persons who do not know how to dance" or "could not make use of the vestments of *Chengiichngech*" -- in other words, the uninitiated. The name *Saorem* corresponds with the name that *Chengiichngech* held before he acquired sacred knowledge (Boscana 1933:30,34).

The title *Yovaarekam* has also been reported for the Gabrielino ritual officials and is probably derived from *yovaar*, the name for the sacred enclosure (Hudson and Blackburn 1978:231,238).

The Yovaar (Sacred Enclosure)

The *yovaar* was ordered by *Chengiichngech* as a sacred location "where they might pay to him adoration, offer up sacrifices, and have religious worship" (Boscana 1933:29). The *yovaar* represented a

sacred space where communication between the secular and supernatural worlds was possible, a supernatural "transition zone" which allowed access to both the upper and lower worlds. In plan it may have been intended to represent the universe (Eliade 1951:260,261; 1957:36,37,42-47). To enter the *yovaar* was to be in contact with *Chengiichngech*, thus admittance was restricted to the elite (Boscana 1933:34). A full description of the *yovaar* is presented later in this report.

Rules and Regulations

According to the creation story *Chengiichngech* "taught them the laws they were to observe for the future as well as their rites and ceremonies" (Boscana 1933:29). Situations covered by these rules included ritual observances, obedience to authority, economic reciprocity, family and social obligations, child rearing, and hygiene.

Respect for authority was expected and demanded, and punishment for disobedience could include execution (Boscana 1933:42,43). Respect for *Chengiichngech* was so great that "the name of God... was never taken in vain" (Reid 1852:37). Reciprocity and food sharing were also required by the rules of *Chengiichngech*. For example, to prevent a hunter or fisherman from hoarding his catch he was prohibited from eating of his own kill (Boscana 1933:61,62; Reid 1852:36).

Child-rearing was based on the rules of *Chengiichngech*. According to Father Boscana "the moral instruction given by parents to their children was contained in the precepts of Chinigchinich... The perverse child invariably was destroyed" (Boscana 1933:45). To teach children to endure the rigors of the hunter-gatherer lifestyle they were not allowed to approach a fire for warmth, nor were they allowed to eat certain foods. To teach them respect for authority, no child was allowed to drink from a cup until an adult had first satisfied his thirst, nor was any child allowed to pass between two adults in conversation (Boscana 1933:47; Reid 1852:37).

Cleanliness and hygiene were important aspects of Gabrielino life. Everyone was expected to bathe once a day, and it appears to have been the custom to bathe each morning before sunrise (Harrington 1933:168, note 141). One of Harrington's consultants reported that when he "was a boy his mother and folks told him to bathe at 5 or 6 o'clock in the morning every morning in the cold water, before the sun came up" (Harrington 1986:R105 F685). Similar regulations undoubtedly covered other aspects of cleanliness and hygiene in the home.

Gabrielino Oral Literature

The Gabrielino used oral literature to preserve their sacred and secular knowledge and pass it from generation to generation. Sacred literature was also used by the *tomyaar* and members of the elite to enforce laws and moral codes and to enhance respect for authority. Specially chosen males were trained to memorize long stories, orations, and histories word for word (Heizer 1968:119, note 54).

Gabrielino Rituals and Ceremonies

Ritual was an integral part of Gabrielino culture, touching almost every aspect of Gabrielino life, both private and public. Significant personal events, such as the birth of a child, the onset of puberty, and marriage, were all celebrated with "rite of passage" ceremonies. These rites of passage sought supernatural favor for the individual while confirming his or her new role in the community (Bean

1972:141-143). The Boy's Puberty Rite, one of the most dramatic of Gabrielino personal rituals, will be described in detail later in this chapter.

Political and legal institutions were also defined and legitimized through large public rituals. Rituals provided important opportunities for lineage gatherings. The association of several lineages jointly participating in rituals created a ritual congregation; the Gabrielino formed ritual congregations with the Cahuilla and Ipai-Tipai (Diegueno), as well as the Chumash, Salinans, Luiseno, and Serrano (Bean 1972:151,152; 1974:17; Strong 1929:98; Harrington 1986:R105 F562). Indians from the Tejon region attended festivals at San Gabriel and San Fernando, and Gabrielino participated in Chumash festivals as well (Librado and Harrington 1977:91).

Ritual also provided an important mechanism for maintaining economic stability and alleviating local food shortages. The exchange of surplus food that accompanied many ritual gatherings helped to maintain an economic balance between lineages and lessen the possibility of violent conflict. Among the Cahuilla such rituals were induced perhaps a dozen times a year. Large-scale hunts to obtain meat were often held in conjunction with these rituals; such hunts were especially important during the winter months when plant foods were scarce (Bean 1972:154-156; Harrington 1942:6).

The following sections will describe in detail the Boy's Puberty Rite, the Girl's Puberty Rite, the Mourning Ceremony, and the Eagle-Killing Rite. These rituals were chosen because the available data permit a more complete reconstruction of the rites than is possible for other ceremonies. Each of these rituals would have been performed at *Povuu'nga* and other ritual centers on a regular basis.

The Boy's Puberty Rite

Personal rituals accompanied each of the major transitions in Gabrielino life, and among the most dramatic of these religious practices were the rites celebrating the arrival of puberty. The most complete accounts of the Boy's Puberty Rite were compiled by Father Geronimo Boscana and by Constance Goddard DuBois. Father Boscana's account was based upon observations he made of the Indians living at Mission San Juan Capistrano around 1813, many of whom were Gabrielino, while DuBois worked with Luiseno consultants early in this century. Although the last reported celebration of this rite took place among the Luiseno around 1858 or 1868, DuBois' consultants remembered many important details of the ceremony (DuBois 1908:77; Sparkman 1908:225).

The Boy's Puberty Rite seems to have been celebrated every other year (DuBois 1908:84). Father Boscana wrote that

> at the age of six or seven years, the children were given a god as protector. This was an animal in which they were told to place entire confidence, and which... would defend them from all dangers, particularly those in war against their enemies.

This protector was not *Chengiichngech*, "but another [spiritual being --W.Mc.] called Touch" who "was invisible, and inhabited the mountains and bowels of the earth" and who appeared "in the shape of an animal of the most terrific description" (Boscana 1933:45).

The central feature of the Boy's Puberty Rite involved the ingestion of a drink of *maanet* prepared from the dried root of *Datura wrightii*, a plant containing a powerful alkaloid with strong hallucinogenic properties (Geiger and Meighan 1976:89; Harrington 1933:162; Harner 1973:128-140; Armstrong 1986). The *maanet* drinking ceremony was held after dark in a secluded location and was supervised by the *tomyaar*, who in turn was aided by several ceremonial officials. The dried *Datura* was prepared by the *tomyaar* in a special stone mortar freshly painted red, white, and black. Under his supervision each

of the initiates drank the beverage; as they drank, the *tomyaar* pressed the palm of his hand against each child's forehead, raising the boy's head when he had swallowed the right amount of the drink (DuBois 1908:78,79).

After drinking *maanet*, the initiates returned to the ceremonial ground while imitating the sounds and movements of various animals in a ritualized procession. They continued singing and dancing at the main gathering area until they became too intoxicated to remain standing, after which they were returned to the secluded area. While in the hallucinogenic trance each boy was supervised by an older initiate who admonished him to stay awake and observe his visions, and to remember the messages given him by his guardian spirit (Boscana 1933:45,46; DuBois 1908:79,80).

During the remainder of the three-day ceremony the initiates received instruction on ritual practices and listened to lectures describing the rules and regulation laid down by *Chengiichngech*. Often they were instructed by members of visiting lineages who shared their own knowledge and ceremonies. They abstained from food during this three-day period, after which they were required to continue abstaining from meat and salt for two or three weeks; other dietary restrictions may have continued for a year (Boscana 1933:45,46; DuBois 1908:80-82; Sparkman 1908:222).

Three days after the *Datura* drinking ceremony the boys participated in another ritual that symbolized their spiritual death and rebirth. A large trench five feet long, two feet deep, and one foot wide was prepared. In the bottom of the trench several round, flat stones were arranged in a straight line; a mesh of milkweed twine was strung around the stones and held in place by wooden stakes. Each initiate was required to leap from stone to stone while steadying himself against the sides of the trench. Younger initiates might also be helped by a sponsor. It was important that the boys not slip or become entangled in the mesh, for if one of them fell it was taken as a sign that he would die young (DuBois 1908:85-87).

In the next stage of the puberty rite the boys were branded on the right arm. A wad of dried herb (*Artemisia vulgaris*, California mugwort) was pressed against the skin and set afire. When it burned to the flesh it raised a large blister that was left untreated. This resulted in a distinctive scar, which Father Boscana reported "added greater strength to the nerves, and gave a better pulse for the management of the bow" (Boscana 1933:46).

Yet another test of endurance was the Ant Ceremony, a ritual in which each initiate was whipped with nettle branches "until he was unable to walk" and then "carried to the nest of the . . . most furious species of ants and laid down among them" while the onlookers "kept annoying the insects to make them still more violent." Father Boscana reported that "having undergone these dreadful ordeals, they were considered as invulnerable, and believed that the arrows of their enemies could no longer harm them" (Boscana 1933:47).

Next, a sand painting was created. Such a painting might consist of three concentric circles with a small pit or depression in the center. The outer circle represented the Milky Way, the middle circle night, and the inner circle blood. An opening facing north cut across all three circles, while the space between the inner circle and the pit was decorated with figures of animals. During the ceremony a lump of sage seed was placed in each boy's mouth, which he then spat into the pit. If the lump was moist after being spat it was taken as a sign that the youth had not heeded the counsel offered to him during the ceremony (Sparkman 1908:221,222).

Father Boscana described a final ceremony, noting that it was open only to members of the elite, "for only such could do penance in the *vanquech* [*yovaar* --W.Mc.]" (Boscana 1933:46). Anthropologist A.L. Kroeber suggested that this ceremony was a higher level of initiation for boys who had completed the *Datura* ceremony. In this ceremony the boys, painted black and red and adorned with feathers, were led in procession to the *yovaar* where they each took a place near the *Chengiichngech* figure. For

three days the boys fasted, received ritual instruction, and underwent tests of strength and endurance. A sand painting described as the "figure of an animal" was created to watch over the boys as they fasted, and "should they partake of any-thing the figure before them would disclose their action, and Chinigchinich would chastise them severely by sending them sickness that would take away their lives" (Boscana 1933:46; Kroeber 1925:640).

The Girl's Puberty Rite

Father Boscana and Constance Goddard DuBois also collected important data on the Girl's Puberty Rite (the last recorded performance of this ritual took place among the Luiseno in the Upper San Luis Rey Valley in 1890). Girls underwent a puberty ritual that served the dual function of preparing them for their future roles as wives and mothers as well as announcing the approaching eligibility for marriage (Bean 1972:143). The ceremony was held for several girls at one time and took place when their fathers notified the *tomyaar* that the girls had begun menstruating. The *tomyaar* then contacted a lineage linked by ceremonial reciprocity with the host lineage and requested an official to preside over the ceremony (DuBois 1908:93,94; Strong 1929:297-299; Sparkman 1908:225).

Ritual seclusion and purification was an integral part of the Girl's Puberty Rite, which also symbolized the girls' spiritual death and rebirth. According to Father Boscana

> they made a large hole in the ground, in shape resembling a grave, and about two feet long. This they filled with stones and burning coals, and when sufficiently heated the latter were taken out, and upon the former they laid branches of the *estafiarte* (a kind of perennial plant), so as to form a bed [Boscana 1933:48].

Once the ceremonial pit was prepared the girls were gathered together and seated before the *tomyaar*. To test each girl's character he gave her a ball of tobacco, which she swallowed with a mouthful of warm water. If the girl vomited the tobacco it was taken as a sign that she was not virtuous (DuBois 1908:94). The girls were then placed in the warmed pit on the bed of fragrant brush, and "for two or three days... permitted to eat but very little. This constituted the term for purification" (Boscana 1933:48). A loosely woven mat or basket was placed over each girl's face to protect her from flies and insects; she was also given a piece of shell or wood to scratch herself, for if she used her fingernails it was believed that she would develop pimples (Boscana 1933:48; Harrington 1942:36; DuBois 1908:94,95; Strong 1929:298).

Visiting lineages also came to participate in the celebration (DuBois 1908:94,95; Strong 1929:298). According to Father Boscana "the outside of the hole was adorned with feathers of different birds, beads," and other decorations, and older women "were employed in singing songs . . . and the young women danced around her at intervals every day" (Boscana 1933:48,49; Harrington 1942:36).

After the purification ritual each girl's face was painted and she was adorned with necklaces, bracelets, and anklets of hair. She fasted from meat, salt, and grease, and drank only warmed water. One month after the purification the *tomyaar* lectured the girls on proper behavior and lifestyle. Each girl then chewed a lump of sage seed and salt and spat it into the center of a sand painting created especially for the occasion, where it was then buried. A footrace to a large rock closed the ceremony. When the girls arrived at the rock their relatives painted their faces with designs representing the rattlesnake; a corresponding design was then painted on the rock (DuBois 1908:96; Harrington 1942:36; Strong 1929:298,299).

Mrs. James Rosemyre, a Gabrielino consultant for C. Hart Merriam, described another type of puberty ritual performed for girls 12 to 15 years of age. At the opening of the ceremony the mothers of

the initiates danced around the girls while singing a song about "to-sow't," a sacred stone or talisman owned by the *tomyaar*. The dance was supervised by an older female official who was responsible for handing the talisman. The official placed the sacred stone in a basket of boiling water, where it began to "gurgle and sing." It was then removed from the water and placed under a bowl-shaped basket containing a bitter tea brewed from the chilicote plant (*Echinocystis macrocarpa*). As each girl took a cup of the tea her mother paid the ceremonial official in shell beads or money. When the ceremony ended, the *tomyaar* declared that the girls had become women (Merriam 1955:86).

The Mourning Ceremony

Large, public rituals were times of great excitement and activity in the Gabrielino towns. Some public rituals, such as the solstice ceremonies, were held every year. Others, such as the Mourning Ceremony, were probably held at intervals varying from one to four years depending upon the time required to collect the shell beads, food, and other goods necessary to hold the fiesta (Merriam 1955:77; Harrington 1942:38).

The Mourning Ceremony has been described as one of the most distinguishing ceremonies of the southern California Indians, and the Gabrielino may have developed many of the elaborate rituals characterizing the ceremony (Kroeber 1925:860). The Mourning Ceremony honored the souls of those who had died since the ritual was last performed, and its performance helped them achieve release from the earth and entrance into the land of the dead (Bean 1972:136). Following the performance of the Mourning Ceremony widows and widowers were once again free to marry (Hudson and Underhay 1978:47).

The Gabrielino called the Mourning Ceremony *Kotuumot Kehaay*, and according to J.P. Harrington they generally held the ceremony in late summer (Harrington 1942:38). Father Boscana, however, said that

> at the time of the death of a captain, or one of the *puplem* [shamans] . . . a *pul* [shaman] observed the moon's aspect, also the month in which the death occurred. In the following year, in the same month, when the moon's aspect was the same, they celebrated the anniversary [Boscana 1933:67, comments in brackets by W.Mc.].

The ceremony generally lasted eight days and comprised a series of four primary rites (Merriam 1955:77; Reid 1852:41,42). The first of these was the "clothes washing," in which the clothes of the deceased were viewed and then ritually rinsed with cold water by the *taakwa*, who then drank the ceremonial rinse water (Harrington 1942:38, notes 182,187). The second ritual was the "clothes burning" and was properly conducted several days or weeks after the clothes washing, although it was more common for the two ceremonies to be performed together. During this ceremony the *taakwa* burned the clothes of the deceased and then gave a recital describing the death of *Wewyoot* (Harrington 1942:38; 1933:191,192, note 187). The third rite was the image-burning ceremony, in which representations of the deceased were consumed in a great fire, while the fourth and final ritual involved the distribution of the property of the dead (Harrington 1942:38; 1933:192, note 187).

According to information obtained by C. Hart Merriam, the Mourning Ceremony was sponsored by a wealthy individual known as the "mah-ne-sas" or *maniishar*, who also presided over the ritual. The *maniishar* provided the food for the fiesta as well as the baskets to be burned during the rituals (Merriam 1955:77). The ceremony was performed on a reciprocal basis, for Juan Melendrez reported to J.P. Harrington that "the F. [Fernandeno] gave the burning fiesta for the dead among the G. [Gabrielino] & the G. gave it for the F. dead" (Harrington 1986:R106 F241, comments in brackets by W.Mc.).

The *maniishar* chose one person from each group invited to the ceremony to act as *tomyaar*. The people chosen were generally not true *tomyaars*, but rather mourners who held a temporary ceremonial office. Each "*tomyaar*" in turn chose two or three of his relatives (usually men) to be workers. The *maniishar* also invited a number of female mourners who brought offerings of food, baskets, beads, and money (Merriam 1955:77,78).

The performers in the ceremony rehearsed for eight days in an "unconsecrated" *yovaar* prior to the start of the ritual; one entire day was also spent consecrating the *yovaar* in which the ritual would be held (Reid 1852:41). The *yovaar* was decorated with feathers, and according to Hugo Reid four poles with feather banners were erected in the cardinal directions (Reid 1852:41).

On the first day of the Mourning Ceremony the workers assembled at the *maniishar's* home, where they were given food and sent to the mountains to find a straight, lofty pine 40-50 feet tall. Once located, this tree was felled, trimmed, and carried back to the festival grounds. The bark was peeled and the trunk polished with pumice and painted with six-inch wide bands of white, red, black, and grey; each band may have represented part of the human body (Merriam 1955:78,79). Jose de los Santos Juncos reported that the pole was painted "in rings 4" broad of alternating red & white" (Harrington 1986:R104 F007).

Next, "choke-mouth" and "funerary urn" baskets were attached to the pole, the bottoms cut out so that they could be fitted over the trunk. The last basket was always turned upside-down and placed on the top of the pole. A small, vertical stick rose from the center of this basket; attached to the end of the stick were three white quills cut from eagle plumes. Two smaller sticks painted red and tipped with small shells extended outward at oblique angles from the base of the first stick. All three sticks were held together with an eagle feather dyed with red earth (Merriam 1955:79; see also Hudson and Blackburn 1986). According to Jose de los Santos Juncos there was "one vertical bunch of feathers at [the] top... with feathers of various colors" (Harrington 1986:R104 F006; Hudson and Blackburn 1986).

The performers in the Mourning Ceremony were elaborately costumed. Hugo Reid observed that they were "adorned with eagle and hawk's feathers, and a plentiful supply of paint laid on the face, neck, arms, and upper part of the body" (Reid 1852:41). According to C. Hart Merriam the women wore ceremonial skirts extending halfway from their knees to their ankles, and necklaces and belts richly adorned with beadwork. Their faces were painted with red designs, and on their heads they wore a band of eagle down or rabbit fur dyed pink. More eagle down adorned their breasts, and they carried rattles of bear teeth and claws. The men painted their arms and bodies and placed a special mark on their chests. Shamans wore knee-length skirts, high caps decorated with eagle plumes, collars decorated with beads, stones, and bear claws, and anklets that jingled (Merriam 1955:80; Hudson and Blackburn 1985).

At the opening of the ceremony the female mourners seated themselves in a circle around the *yovaar*, leaving only the doorway open (Reid 1852:41). While the *kotuumot* pole was being decorated with baskets, the mourners tossed offerings of food, clothing, beads, and baskets against and chanted mournfully. As the workers raised the pole, the mourners shook shallow baskets filled with seeds and pine nuts, then tossed the seeds and nuts against the pole while singing. When the *kotuumot* pole was in place the workers gave three whoops, vibrating their fingers against their mouths. The singers then formed a circle around the pole and sang to it, all the time keeping in step while moving forwards and backwards. This dance and song was repeated each morning, afternoon, and night of the fiesta (Merriam 1955:81).

In recounting the Juaneno mourning ceremony J.P. Harrington's consultant Jose de la Gracia Cruz described

> a large corral made of guatamote [*Baccharis*]. In the center [was] a very high pole, ka-too-mut. They made a bunch of feathers [and] pulled it up by a string to the top of the pole. I don't know where they got so many feathers -- called mashat (mah-sout=vestido [garment] of feathers for lions). While they hauled it up two musicos played on flutes made of the shin bone of the fore-leg of a deer. Each of the 2 musicos had a flute... in each hand [Harrington 1986:R121 F530, comments in brackets by W.Mc.].

On the final day of the celebration the offerings of the dead were burned. Hugo Reid noted that "the old women were employed to make more food than usual, and when the sun was in its zenith it was distributed, not only among the actors, but to the spectators likewise" (Reid 1852:42). At Tejon, the *kotuumot* pole was moved to the graveyard and re-erected, and for the last time the performers gathered around it and sang.

The participants then returned to the festival grounds, while the *tomyaars* entered the house where the offerings were stored and withdrew enough money to pay the workers. The remainder of the money was placed in a large sealskin bag, called "*Chi'-e-vor*," which was decorated with shells, beads, and feathers. The *Chi'-e- vor* was carried to the center of the festival grounds by several shamans, led by one of their members who walked backwards while uttering "Huh, huh, huh." Another shaman followed him, also walking backwards, chanting and waving his hands with the palms extended downward. Next in the procession came the relatives (Merriam 1955:82,83).

The effigy was burned at the festival grounds, along with a portion of hair from the deceased which had been saved for the occasion (Merriam 1955:83). Hugo Reid reported that

> after eating, a deep hole was dug, and a fire kindled in it, when the articles reserved at the death of relatives were committed to the flames; at the same time, baskets, money, and seeds were thrown to the spectators... During the burning process, one of the seers, reciting mystical words, kept stirring up the fire to ensure the total destruction of the things. -- The hole was then filled up with earth and well trodden down [Reid 1852:42].

C. Hart Merriam calculated that hundreds of dollars in food, shell bead money, and gifts were burned in the ceremony; many of these offerings were made by very poor individuals as a demonstration of their devotion to the deceased (Merriam 1955:82,83). Archaeological excavations conducted in 1945 at Big Tujunga Wash revealed what may have been a Mourning Ceremony site complete with offerings that included burnt whale bone (possibly from grave markers), ceremonial stone knives, soapstone tobacco pipes, awls and gaming pieces of deer bone, arrowpoints, large projectile points, shell and soapstone beads, abalone shell, stone gorgets, hammerstones, stone harpoon barbs, stone bowls, mortars, pestles, and manos (handstones). Similar sites have been discovered on San Clemente Island and at Malaga Cove on the Palos Verdes Peninsula (Walker 1952:102-116; Meighan 1983; Eisentraut 1990).

Following the burning of the offerings a young, unmarried man was carried to the festival grounds. He was called *toovet*, meaning "son of a chief" (Merriam 1955:83), although *toovet* was also the name that *Chengiichngech* took for himself "when he danced enrobed in a dress composed of feathers with a crown of the same upon his head and his face painted black and red" (Boscana 1933:30). According to Harrington consultant Jose de los Santos Juncos, "at the close the old man who was the leader (tv_t) hit his two sticks which he held in his hands together again. The tv_t was painted & with feathers on him" (Harrington 1986:R104 F010).

The *toovet* wore a large, richly-decorated feather headdress of eagle plumes and shell beads that reached to his shoulders, and a skirt of white and black feathers. His body was painted red, white, blue, and grey, and he wore a sacred funeral rope wound around him in a spiral fashion. On each shoulder

the *toovet* wore a rattle decorated with feathers, and he carried two sticks which he struck together to keep time (Merriam 1955:83; Hudson and Blackburn 1985).

It was the *toovet's* duty to undertake a magical flight to lead the souls of the dead to the afterworld. His whirling dance was symbolic of the arduous journey made by his soul as it led the souls of the deceased to the land of the dead, and the wooden sticks he held were believed to magically assist him in travelling great distances quickly. The *toovet* performed while the men around him sang, and as the pace of his dance increased he whirled rapidly on the spot where the fire had recently burned. When his performance was complete the ceremony was ended (Merriam 1955:84; Bean 1972:139; Eliade 1951:477-482; Hudson and Underhay 1978:90).

Subsequent rituals may have included a reburial of any offering that survived the fire, sometimes with the bones or ashes of the deceased. Among the Chumash a ritual bathing of mourners was held on the morning following the celebration (Hudson and Underhay 1978:47).

An Eagle Rite was also sometimes held in conjunction with the Mourning Ceremony. During this elaborate and extended ritual a bird, usually a white-headed or golden eagle, or a California condor, was ritually slain and its feathers used to make the ceremonial skirt worn by the *tomyaar* or shamans (Harrington 1933:176, note 164). As noted earlier in this chapter, a close ritual association existed between the sacred figure Eagle and the *tomyaar*. The eagle was owned by the *tomyaar*, and among the Cahuilla and Luiseno an Eagle Rite was conducted one year after the death of a *tomyaar* or one of his close relatives (Harrington 1942:33; Strong 1929:307).

The eagle symbolized the continued life of the lineage; he allowed himself to be killed so that the lineage would be preserved (Bean 1972:138,139). Father Boscana alluded to this belief when he observed that "as often as the bird was killed it multiplied, because every year all the different *capitanes* celebrated the same feast... and were firm in the opinion that the birds sacrificed were but one and the same" (Boscana 1933:58,59). The death of the eagle also symbolized the magical flight undertaken by the shaman to lead the souls of the dead to the afterworld or to make contact with the supernatural world (Bean 1972:139).

The Eagle Rite lasted from three days to a week, during which period different lineages were invited to participate in the ceremonies. On the eve of the main celebration a formal announcement was made of the upcoming ritual, and a temporary *yovaar* was prepared. The next day the eagle was carried in procession to the temporary *yovaar* and placed on a special altar. The shamans then performed a ceremonial dance while young unmarried girls ran races "to and fro with great rapidity, some in one direction, and some in another" (Boscana 1933:58).

The eagle was then carried to the main *yovaar* in a second procession led by the shamans, and

> arriving at the temple, they killed the bird without losing a particle of its blood. The skin was removed entire... for the purpose of making their festival garment.... The carcass they interred within the temple in a hole previously prepared [Boscana 1933:58].

Juan Melendrez, a Harrington consultant, reported that

> it was anciently the custom in the fiesta when they caught an eagle to spread out a skin on the ground and tie the eagle sentado [sitting] on it, then all threw chia, corn, bellota [acorns], everything, till the eagle was buried up to its neck and thus paid it... then a good shot shot an arrow at its head and killed it [Harrington 1986:R106 F194, comments in brackets by W.Mc.].

Jose de la Gracia Cruz recalled that

> el gavilan could be tied with his wings fastened together in the back. And made to sit on the ground -- at a distance of about 70 feet a group of quione at a time they would yell "Hee- e-ee-ee-!" and at the same time stamp with the foot. Each in turn would yell thus, and if one was strong enough the gavilan would drop dead [Harrington 1986:R121 F568].

The remains of red-tailed hawks that appear to have been ritually slain have been recovered from a number of archaeological sites within the Gabrielino territory, including the Newland House Site in Huntington Beach (ORa-183), the Encino Site (LAn-43), and Lemon Tank on San Clemente Island (Cottrell et al. 1985; Langenwalter 1986; Eisentraut 1990).

After the eagle was slain, several older women gathered about the bird's grave, mourning his death and bestowing gifts of seeds and food in thanksgiving. The fiesta continued for three days and nights after the eagle's death (Boscana 1933:58).

The political, economic, social, and ritual culture described in these chapters was shared by all the rancherias of the Gabrielino homeland, although local and regional variations probably existed. For example, Father Boscana recorded two different versions of the creation story and remarked that "the Indians of this particular location (the mission of San Juan Capistrano) account for the creation of the world in one way, and those of the interior... in another" (Boscana 1933:27).

In considering these regional variations special attention must be given to the coastal rancherias. These coastal settlements, which had access to marine food resources and participated in the maritime trade linking the mainland and the islands, were a unique and vital segment of the Gabrielino economy and culture. One of the most important of these rancherias was *Povuu'nga* which was located north of Alamitos Bay. It was here that the *Chengiichngech* religion first flowered, and it is this rancheria that forms the subject of Chapter 3.

CHAPTER 3
POVUU'NGA: A COASTAL GABRIELINO RANCHERIA AND RITUAL CENTER

William McCawley

INTRODUCTION

The Gabrielino rancheria of *Povuu'nga* was located north of Alamitos Bay near the eastern boundary of the present city of Long Beach. Geographically, this location lies in the transition zone between the sheltered coast, which extended from San Pedro northward, and the exposed coast, which stretched from San Pedro Bay south to Newport Bay. In a sense, however, *Povuu'nga* is an exception to the Gabrielino settlement model in that it represents a permanently occupied rancheria located in a region that mostly included only temporary campsites. This is due in part to the environment occupied by this rancheria as well as the unique role the community played within Gabrielino society.

Povuu'nga - "Place of the Gathering"

J.P. Harrington's Gabrielino consultant recalled that *Povuu'nga* means "en la bola," ("in the circle") and he went on to conjecture that "there must have been a bola of stone, maybe, there, antes" (Harrington 1986:R102 F360). Bernice Johnston, citing an unknown source, suggested that "this could carry the connotation 'in the crowd'" (Johnston 1962:39). Among the translations cited for the word *bola* in *Appleton's New Cuyas English-Spanish and Spanish-English Dictionary* (Fifth Edition Revised) are "crowd" and "riotous meeting," suggesting that the name *Povuu'nga* may translate as "place of the crowd," or "place of the gathering" (Dixon 1972).

GEOLOGY, HYDROLOGY AND ENVIRONMENT OF *POVUU'NGA*-ALAMITOS MESA

Geologically, *Povuu'nga*-Alamitos Mesa is part of the Signal Hill Uplift, a series of low hills running southeast-northwest for about seven miles. The Signal Hill Uplift includes Los Cerritos Hill, Signal Hill, and Los Alamitos Heights, of which *Povuu'nga*- Alamitos Mesa forms a southeastern projection. The Signal Hill Uplift, in turn, is part of a larger series of hills formed by folding and uplift along fault lines that includes Beverly, Baldwin, Rosecrans, Dominguez, Signal, and Landing hills (Dixon 1974:37-39).

Early topographical maps dating to 1872 and 1873 (Figures 3.1 and 3.2), as well as the Downey Sheet USGS map dating to 1899 (USGS 1899), show *Povuu'nga*-Alamitos Mesa as a finger of land projecting eastward into a low-lying region of marshes and mudflats. A prominent stream or drainage bounded *Povuu'nga*-Alamitos Mesa on the north, emptying into the marshes lying southeast of the hill. A large freshwater pond located a mile-and-a-half west of the ranch house also seems to have been a permanent feature; it appears in both the 1872 and 1899 maps.

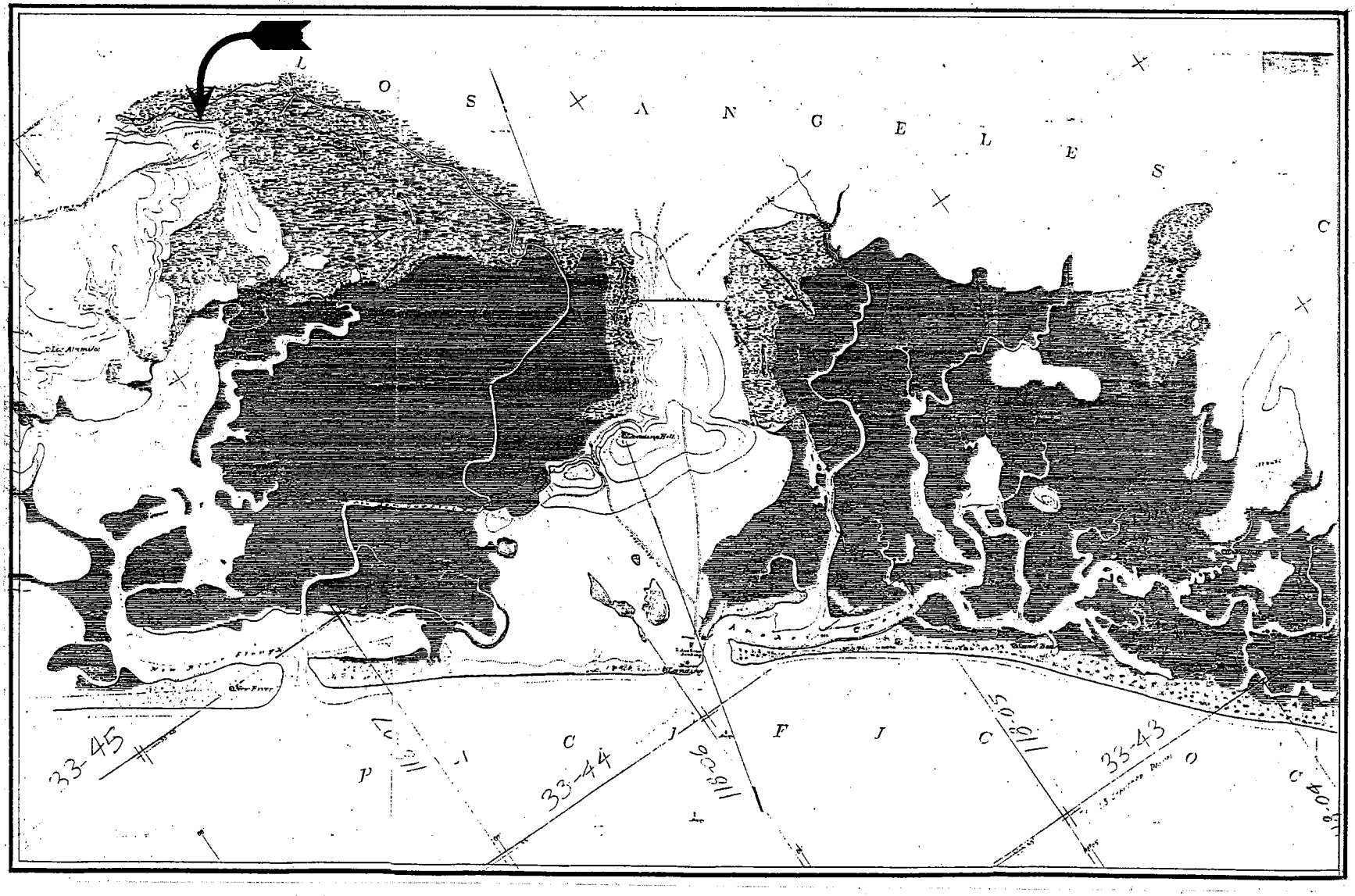

Figure 3.1. U.S. Coast and Survey Register No. 1345. Arrow indicates the position of the Los Alamitos ranch house (courtesy of the National Archives).

Grasslands or low-lying pastures bounded the mesa on the north and northeast, while to the east and southeast lay marshes or mudflats. These marshlands extended more than a mile to the southeast, ending at the base of Landing Hill and filling the intervening region down to the coast. The channel of the New San Gabriel River cut through these mudflats on its way to the ocean. South of the mesa lay a region of mudflats and saltmarsh known as Alamitos Bay, and between Alamitos Bay and the ocean was New River Slough, a body of water fed by the outflow of the New San Gabriel River.

An important factor in reconstructing the early environment of *Povuu'nga* are the historically documented changes in the course of the San Gabriel River. According to one historical account, from 1825 to 1867 the San Gabriel and Los Angeles rivers joined together north of Long Beach to flow through Dominguez Gap and empty into San Pedro Bay. During the flood of 1867, however, the San Gabriel River left its bed and cut a new channel east of Rancho Los Alamitos to flow into Alamitos Bay (Warner et al. 1876:18). The river follows the same general course today.

Interviews conducted by J.P. Harrington, however, established that by 1850 the "New San Gabriel River" was already following the 1867 course and had cut a channel 12 feet below the level of the surrounding countryside (Harrington 1933:208). Harrington noted that

> Mr. Rhodes [Allin L. Rhodes, President of the California Title Insurance Company --W.Mc.] 1st interview says that it is clear that since Manuel Nieto died in 1804, the New San Gabriel River was running at that time, and was evidently running for years before that time, and there were no springs or wells. You can raise grapes without water, but you have to have water for your house and for your cattle, and the water was evidently taken from that ditch [Harrington 1986:R126 F121].

Harrington concluded that "these ditches are old flood or emergency delta channels of the Rio Hondo, and show a tendency of that stream to break from its bed and discharge its waters in Alamitos Bay instead of carrying them to the Los Angeles River" (Harrington 1933:208). Thus, although the volume of water flowing through the New San Gabriel River into Alamitos Bay increased following the flood of 1867, there is historical evidence for stream flow along the same course prior to that date.

Early maps of Rancho Los Alamitos are an aid to reconstructing the hydrology of the region prior to 1867. An 1834 *diseno* of Los Alamitos shows two major streams emptying into the bay (Figure 3.2; Records of Spanish Archives, Vol. 1, pg. 117). The eastern stream, which is unnamed on the *diseno*, originates in the hills southwest of Brea Canyon and follows the general course of Coyote Creek southward to the bay. The western watercourse, identified as a "*Sanja*" ("ditch") on the *diseno*, flows southward from the Puente Hills through Rancho Santa Gertrudes. It forms part of the *lindero* (property boundary) between ranchos Los Cerritos and Los Coyotes before turning eastward to drain the region north of Signal Hill and flow into Alamitos Bay. A later plat map of Los Alamitos identifies this as San Jose or La Puente Creek (Figure 3.3). These watercourses can be traced on the Downey and Anaheim USGS maps prepared in 1898 and 1899 (USGS 1898; 1899); remnants of the *Sanja* may also be seen in early aerial photographs of the region (Figure 3.4).

Other early maps provide additional information. A plat of Rancho Los Alamitos prepared in 1855 shows four watercourses crossing the rancho's northern boundary, all four presumably flowing into Alamitos Bay (Figure 3.5). Two of these streams most likely represent the *Sanja* (San Jose -- La Puente Creek) and Coyote Creek. A second map, prepared by Henry Hancock in September, 1858, confirms the existence of these four watercourses (Figure 3.6). Interestingly, a third plat, prepared in 1858 by Knox and Ramble of Anaheim using Hancock's survey data, shows only one watercourse which traverses the rancho from north to south and empties into the bay (Figure 3.7).

Thus, even before the flood of 1867 changed the course of the San Gabriel River, Alamitos Bay served as a major drainage for the region; the freshwater lakes and marshes surrounding *Povuu'nga-*

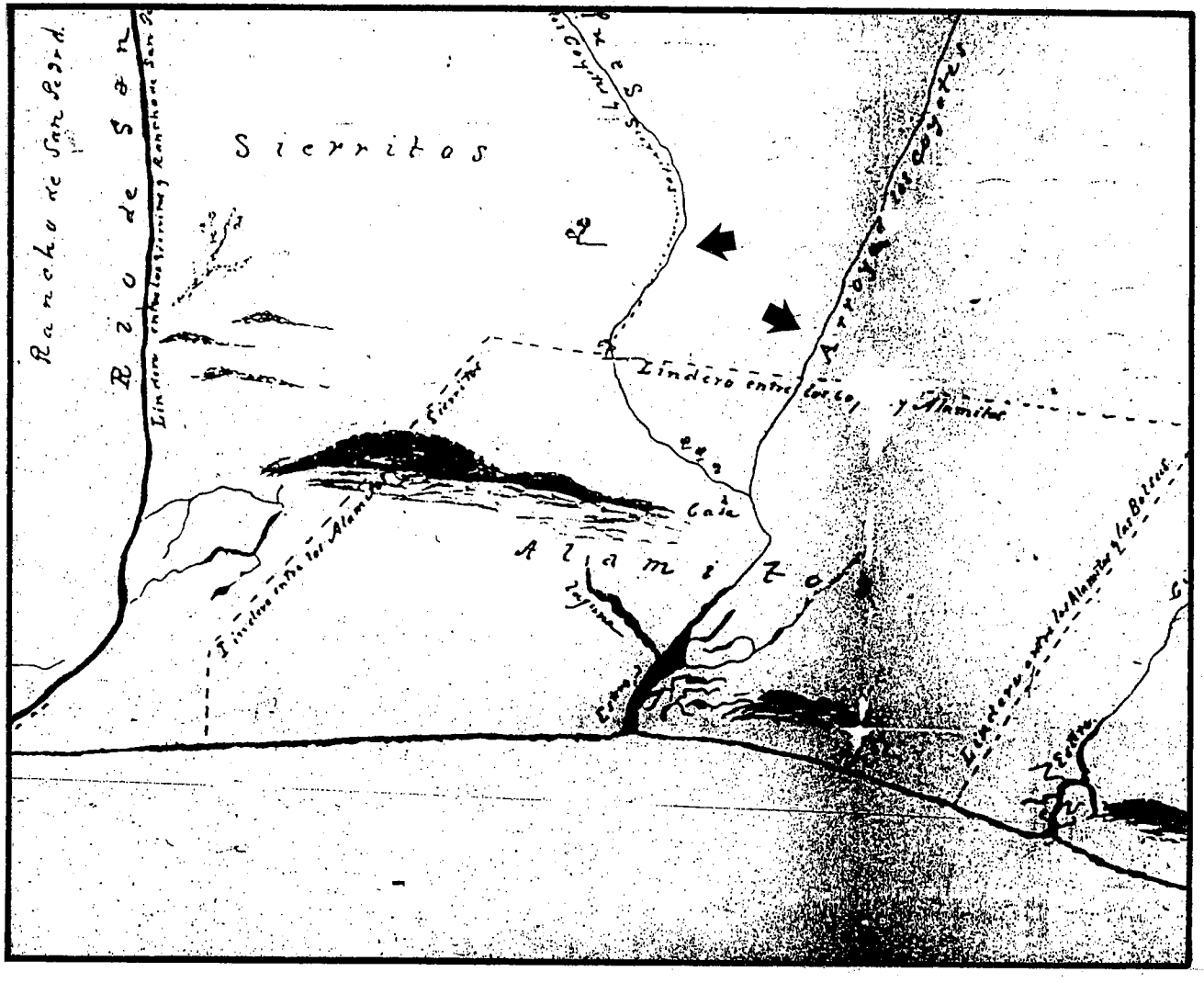

Figure 3.2. Section of the diseno of 1834 showing Rancho Los Alamitos. Arrows indicate major watercourses discussed in the text (courtesy of the National Archives).

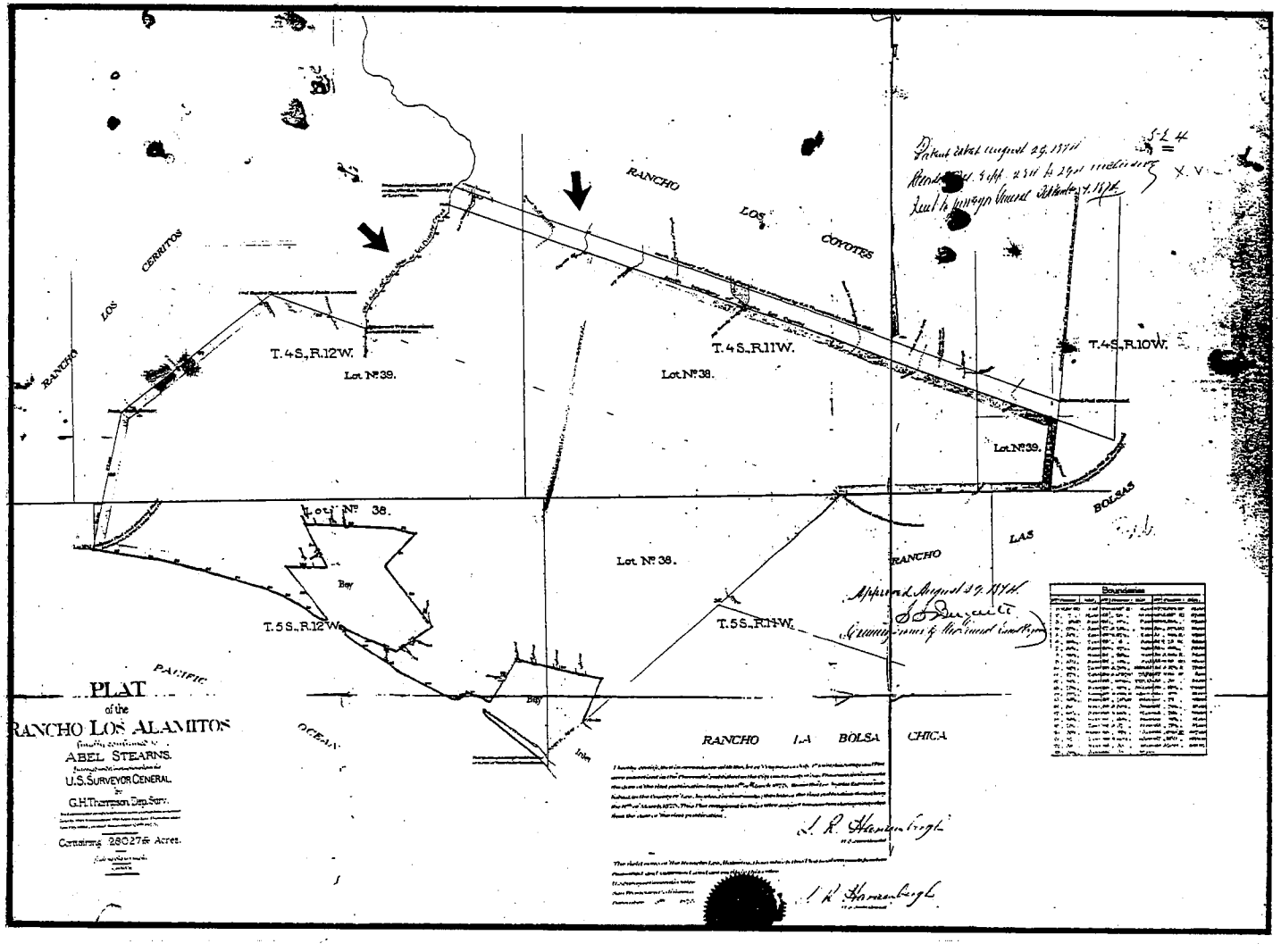

Figure 3.3. Plat of Rancho Los Alamitos, 1873. Arrows indicate locations of San Jose-Lapuente Creek and Coyote Creek (courtesy of Rancho Los Alamitos Historic Ranch and Gardens, Long Beach, CA).

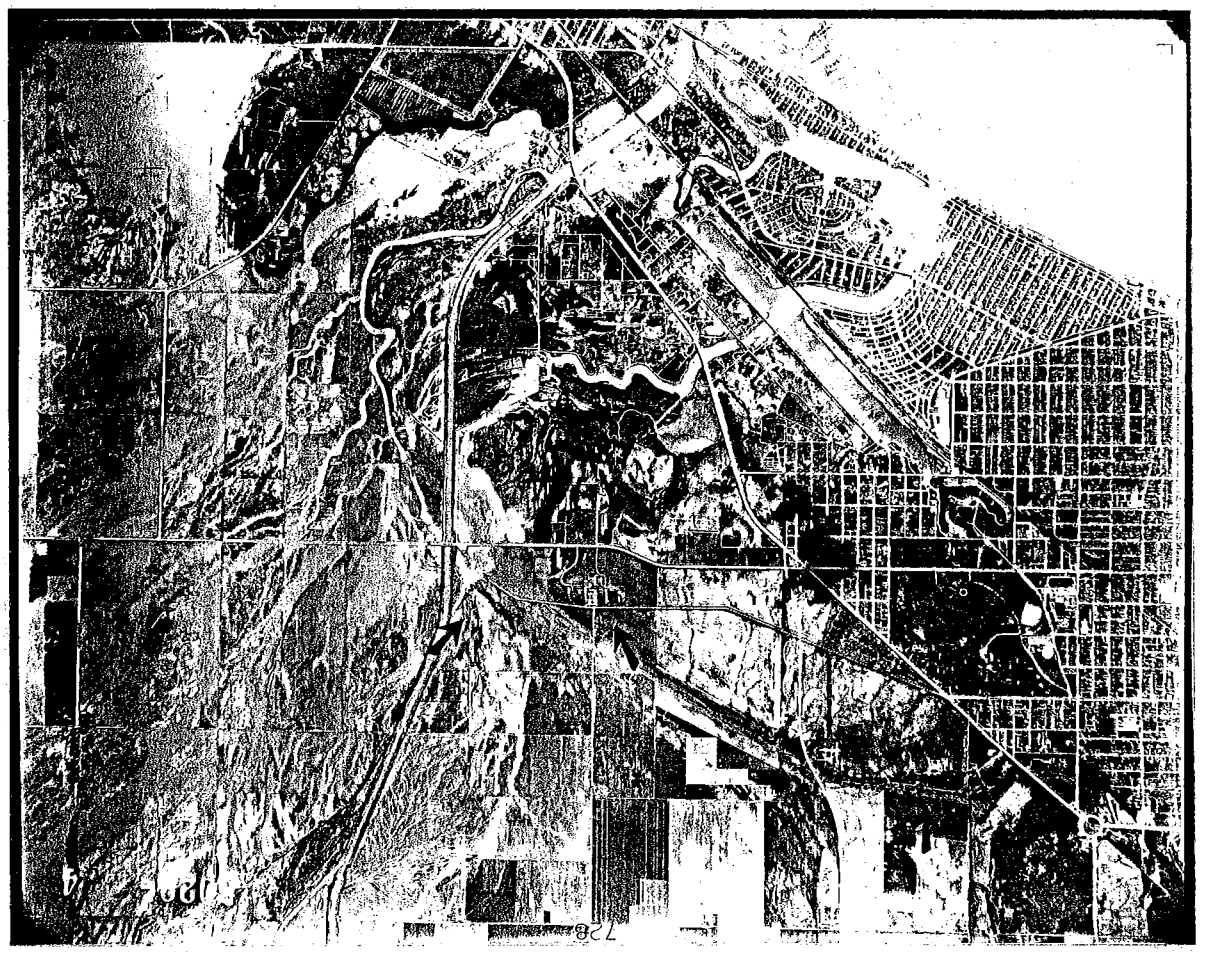

Figure 3.4. Aerial photograph of Rancho Los Alamitos during the flood of March, 1938. Arrows indicate the locations of the Los Alamitos ranch house and teh remnants of a watercourse skirting the northern edge of *Povuu'nga*-Alamitos Mesa (Fairchild Aerial Photography Collection, Whittier College, Flight C5029, Frame 4).

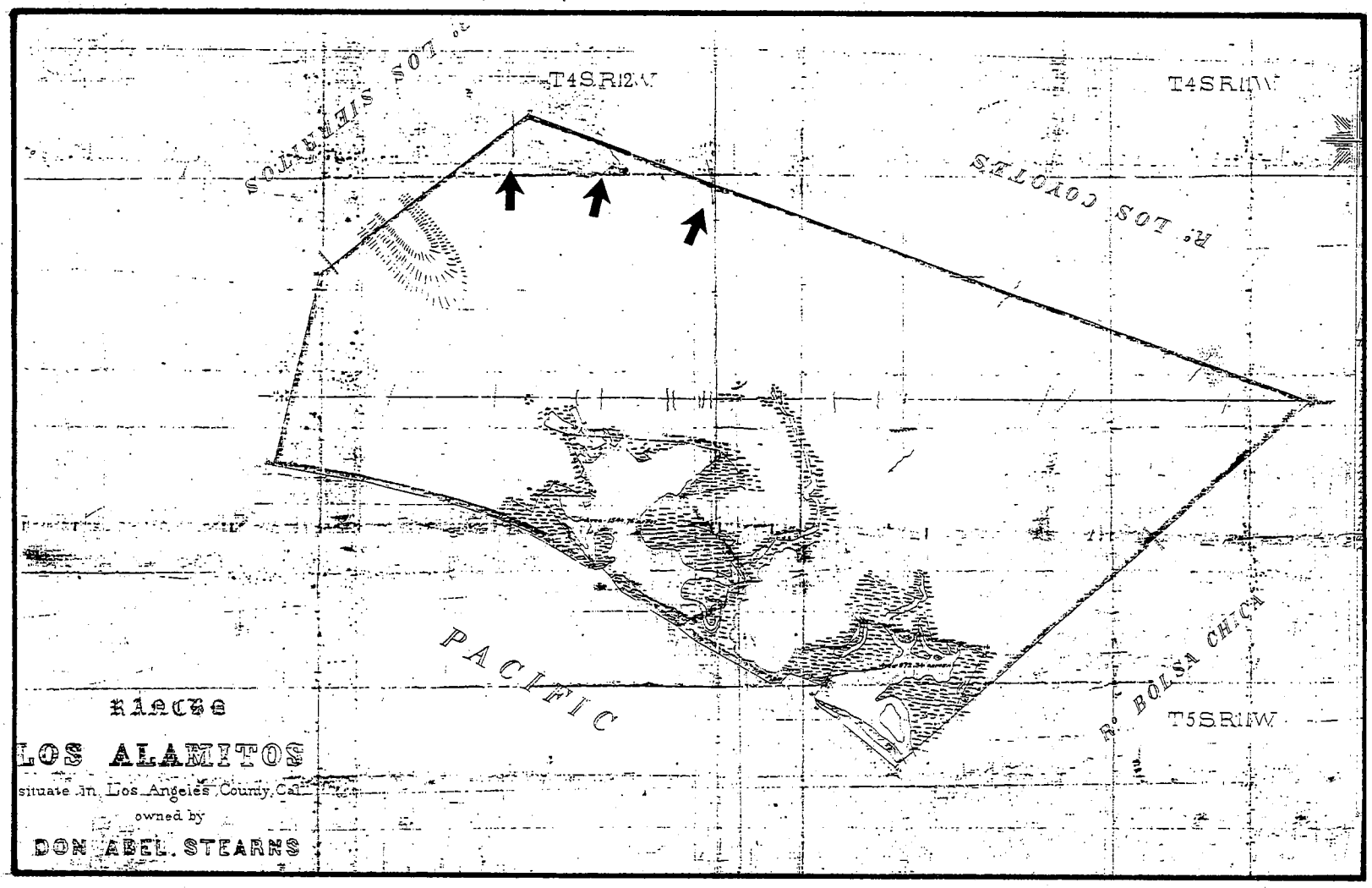

Figure 3.5. Solano-Reeve Map 5, 1855. Arrows indicate the locations of watercourses crossing the northern boundary of Rancho Los Alamitos (courtesy of the Huntington Library).

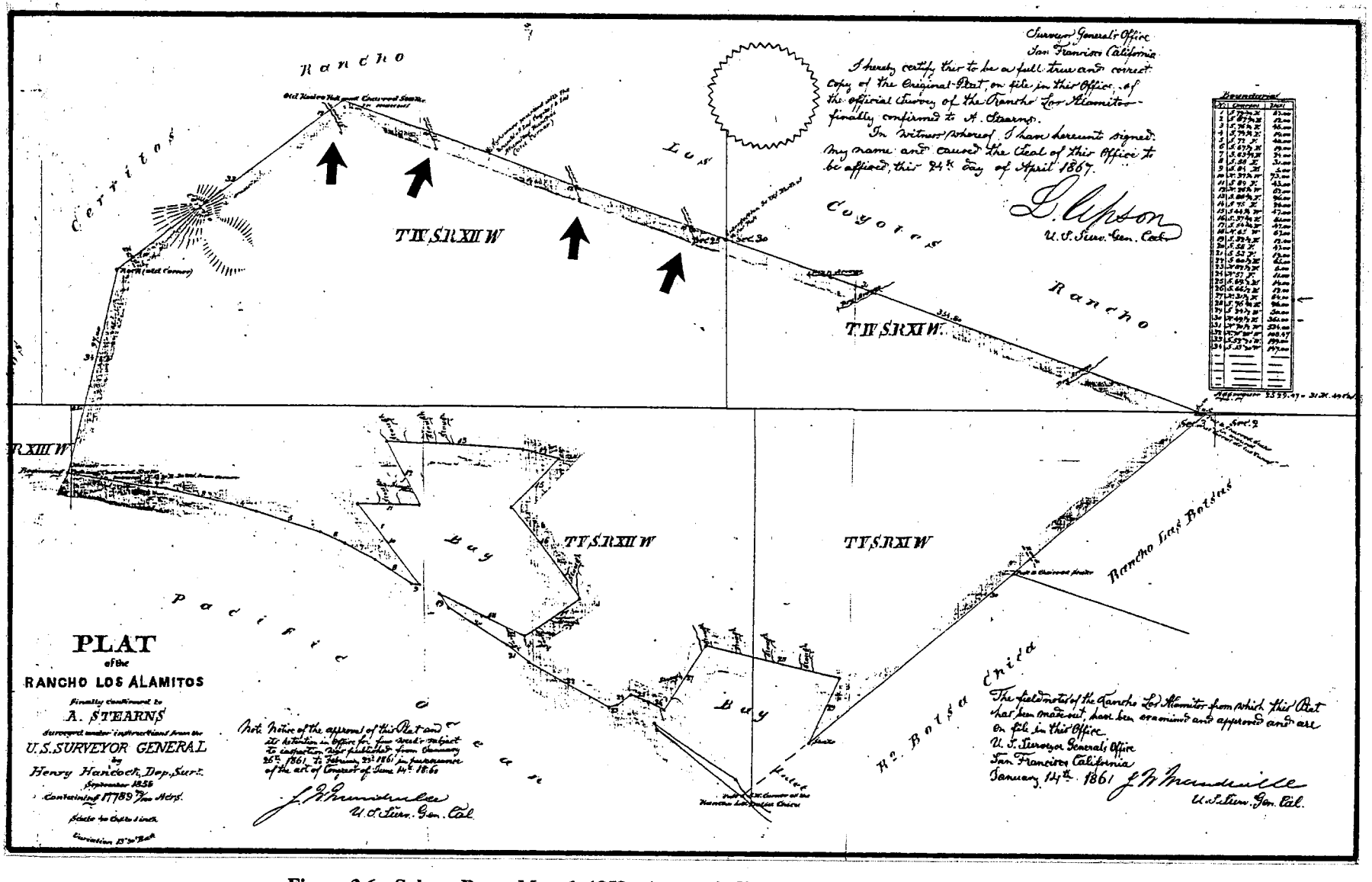

Figure 3.6. Solano-Reeve Map 6, 1858. Arrows indicate the locations of watercourses crossing the northern boundary of Rancho Los Alamitos (courtesy of the Huntington Library).

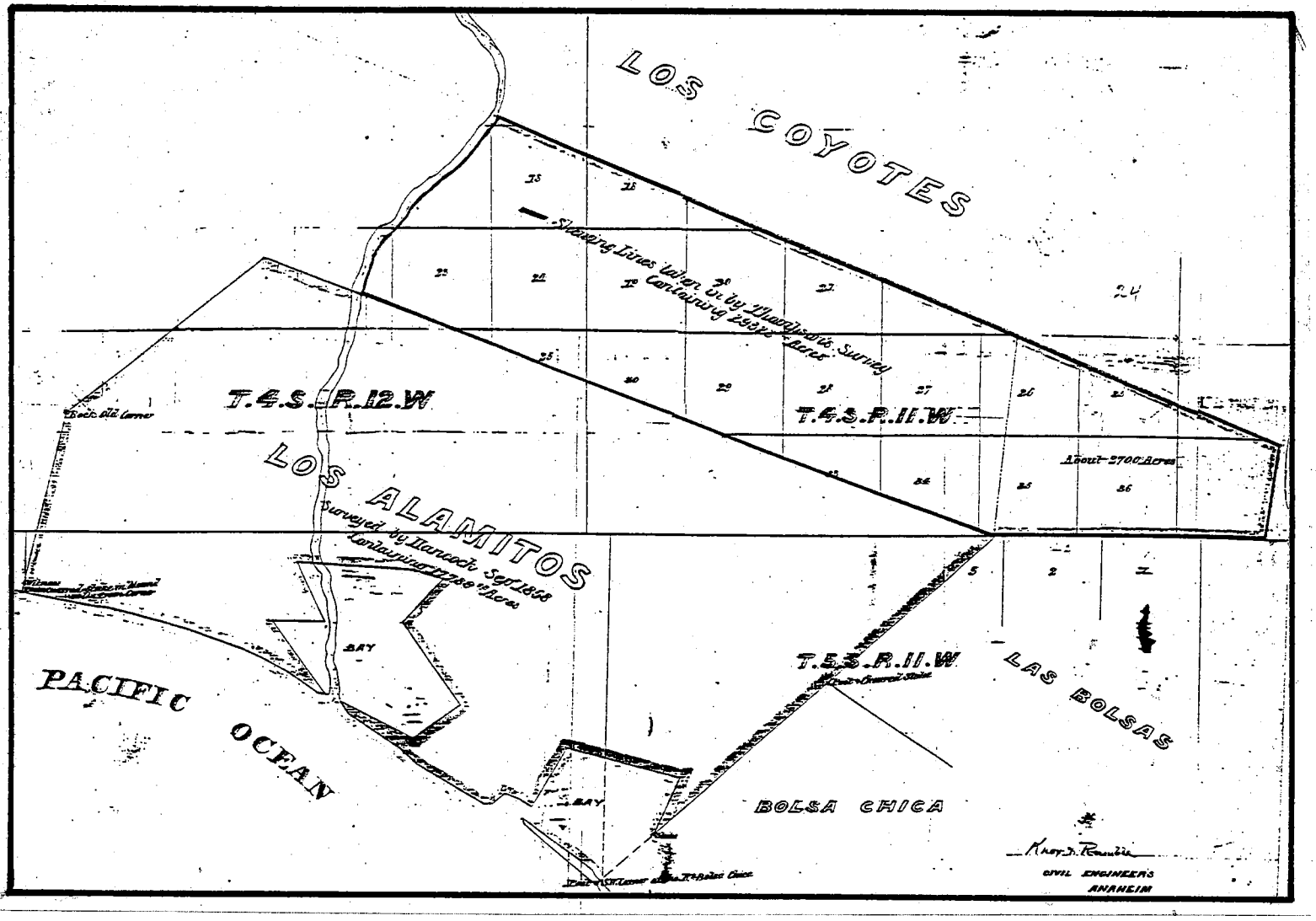

Figure 3.7. Solano-Reeve Map 7, 1858 (courtesy of the Huntington Library).

Alamitos Mesa were fed by a number of streams or small rivers draining from the regions to the west, north, and northeast. These lakes and marshes, as well as the nearby saltmarshes and mudflats, created a rich environment that provided an especially nutritious and varied diet for the inhabitants of *Povuu'nga*.

The most important water source was a spring located on the southeastern slopes of *Povuu'nga*-Alamitos Mesa. In fact, this spring was probably the major factor in the placement of the town. J.P. Harrington reported that

> Mr. Bixby says that this was the most famous spring in the region, the only one on the inland side of Los Alamitos Bay, and has supplied the house and all the stock with water during the whole history of the Los Alamitos ranch [Harrington 1933:149].

The name Los Alamitos, meaning "the little cottonwoods," is derived from

> the occurrence of a great jungle of small cottonwood trees at the place. Even Mr. Fred H. Bixby remembers these, and says that the small cottonwoods were growing at the spring and also elsewhere in the region [Harrington 1933:149].

Local Environment and Habitats

Perhaps the earliest description of the *Povuu'nga*-Alamitos Mesa region was written in 1833 by Juan Patricio Ontiveras. In describing the Alamitos tract Juan noted that "there is a zanja of permanent water; it is however, without timber, excepting a few alamos [cottonwoods] at the point where I intend to make my settlement [*Povuu'nga*-Alamitos Mesa]" (quoted in Young et al. 1989:102, comments in brackets by W.Mc.).

The next detailed information comes from the U.S. Coast Survey maps dating to the 1870s, although the local environment was already greatly altered from the Gabrielino period. Decades of stock grazing, changes in river courses, irrigation projects, and the draining and filling of low-lying areas had affected the local habitats and plant communities. Nonetheless, using these data a general outline of the environment as it existed during Gabrielino times can be attempted. Eight different biotic habitats have been postulated for the Long Beach region, including saltmarsh-estuary, freshwater marsh, grassland-herbland, southern oak woodland, riparian woodland, chaparral, coastal sage scrub, and beach and coastal strand (Dixon 1974:40-43).

The saltmarsh-estuary environment was once present along the Gabrielino coast from Point Fermin south to Newport Bay; remnants of this habitat can be observed today at the Bolsa Chica wetlands and Newport Bay. The saltmarsh-estuary is described as "a tidal environment, up to 10 feet in elevation, with mud or sand flats" that are "connected to the ocean by channels through the barrier beaches that parallel the coast" (Dixon 1974:41). The principal resources that the saltmarsh-estuary habitat provided to the inhabitants of *Povuu'nga* were shellfish, migratory birds and waterfowl, and certain plants. J.P. Harrington reported of consultant Ms. Magdalena Murillo that she

> tells much about a punta [promontory] that entered the sea. What good aulones and almejas blancas, white clams lavadas (= standing) in the sand, just a little bit of the clam outside the sand.
>
> Alamitos was at the punta of la Bolsa Chiquita. There was a mesa there. It had been [a] ranch of Don Abel Stearns [Harrington 1986:R123 F234, comments in brackets by W.Mc.].

Shellfish collecting was clearly an important economic activity of the Gabrielino of *Povuu'nga*. When J.P. Harrington visited the mesa early in this century he reported "possibly 1 1/2 to 2 acres covered with the shell refuse" (Harrington 1986:R123 F233). The abundance of shellfish middens in the region also testifies to the importance of this food source to the Indian inhabitants (see Mason 1987; Chace 1969).

Freshwater marshes once existed on the Long Beach and Downey plains to the west, north, and east of *Povuu'nga*-Alamitos Mesa; the 1872 Coast Survey Map (Register No. 1283) shows a "fresh water pond" a mile-and-a-half west of the ranch house which is still present on the 1899 USGS map, suggesting that it was a permanent feature of the local environment. Four miles west of the mesa, the outflow of the Old San Gabriel River (today's Los Angeles River) created a large "willow thicket" that undoubtedly represented another region of marshlands, although this habitat may have evolved after Los Angeles River began discharging into San Pedro Bay during the flood of 1825.

Freshwater marshes offered the Gabrielino a variety of plants used in basketry and house construction including sedges, rushes, cattails, and willows. Freshwater shellfish, amphibians, reptiles, small mammals, and waterfowl could also be taken from the freshwater marshes, as well as pond turtles. The shells of the Pacific Pond Turtle (*Clemmys marmorata*) were made into rattles that were used during Gabrielino ceremonies.

Such a rattle was recovered in the early 1950s from a grave in the Los Altos district several miles north of *Povuu'nga*-Alamitos Mesa. The rattle was found buried with the skeleton of a young man, perhaps a ritual official. It consisted of two Pacific pond turtle shells filled with pebbles and shells. The carapace (upper shell) and plastron (undershell) of each were drilled and fastened together with cord and asphaltum; a handle was inserted through a hole drilled in the center of the shell (Wallace 1980).

Interspersed with the freshwater marshes were grassland- herbland, southern oak woodland, and riparian woodland habitats. A description of Nietos Valley penned by Harrington probably applies to much of the region, for Harrington reported that there was "not a tree in Nietos Valley, only willows in [the] river, & a few encinos [oaks] on the hills & lots of water, lakes all over" (Harrington 1986:R126 F69, comments in brackets by W.Mc.).

The grassland-herbland is characteristic of low hills and plain, and provided many of the seeds used for food by the Gabrielino. Deer, antelope, and small mammals such as rabbits, all of which could be found in these habitats, were important to the Gabrielino diet. Large-scale rabbit hunts were often held in conjunction with seasonal fiestas; the rabbits were driven into long nets stretched across the ground and then clubbed to death. The Gabrielino also burned off portions of grassland to increase the seed yield and improve the forage for grazing animals such as deer (Bolton 1927:137,143; see also Timbrook et al. 1982).

Southern oak woodland probably existed in the immediate vicinity of *Povuu'nga* as small stands of trees "interspersed in savanna-like association with the grassland-herbland habitat in the nearby Downey Plain and perhaps the Long Beach Plain" (Dixon 1974:42). These somewhat isolated groves probably provided some acorns for the consumption of the people of *Povuu'nga*; however, the extensive oak groves found in the Santa Ana Mountains twenty miles to the east may have been an equally important source. Acorns from this region may have reached *Povuu'nga* by way of gathering expeditions or through trade with neighboring lineages.

The riparian (streamside) woodland is characteristic of locations where abundant water is available on a year-round basis. Vegetation comprises trees such as sycamore, alder, willow, and cottonwood, as well as grasses and herbs. The abundance of surface water in the riparian woodland, including nearby freshwater marshes, also attracted a variety of large and small mammals and birds. In

the *Povuu'nga* region the San Jose -- La Puente Creek and Coyote Creek drainages would have provided excellent riparian woodland environments for the Gabrielino. Harrington's Juaneno consultant Anastacia de Majel recalled a blackberry patch near *Povuu'nga* that was most likely located in a riparian environment. The consultant's mother

> went to a place where a lot of wild blackberries [probably *Rubus ursinus*] were growing, and it was some distance from Don Abel's [Abel Stearns] house. Has an idea that blackberry patch was pa lado del rio [toward the river] from Don Abel's house, but place she went to gather blackberries is called pikkwal, loc. pikkwal_a [Harrington 1986:R129 F307, comments in brackets by W.Mc.].

The chaparral habitat comprised a dense, evergreen shrubbery that probably once covered the slopes of Signal Hill, Landing Hill, and perhaps *Povuu'nga*-Alamitos Mesa. It is still found today in the Santa Ana Mountains and portions of the Palos Verdes Peninsula. Dominant vegetation includes scrub oak, salvia, manzanita, sumac, buckwheat, and other woody plants. Chaparral provided a rich habitat for deer and small mammals, although access was difficult because of the dense underbrush.

The coastal sage scrub habitat consisted of a hillside cover that was less dense than the chaparral and probably once covered portions of Signal Hill, Landing Hill, and *Povuu'nga*-Alamitos Mesa. This habitat was home to many of the small mammals hunted by the Gabrielino, such as rabbits, rats, and squirrels. The coastal sage-scrub habitat also included stands of prickly-pear cactus, which was a special delicacy. Prickly-pear fruit was picked with wooden tongs and then singed to remove the spines before being eaten.

The beach and coastal strand was present in stretches along the coast from Point Fermin south to Newport Bay. Changes in the outflow of the Los Angeles, San Gabriel, and Santa Ana rivers during the last century have made it difficult to assess the extent of this habitat during Gabrielino times; however, beach and coastal strand was probably present most immediately in the region south of Alamitos Bay. This habitat provided the Gabrielino with shellfish, seaweeds, sea mammals, seabirds, and shallow-water fish.

Settlement Patterns at *Povuu'nga*

According to the settlement scheme described earlier in Part 1 (see Chapter 2) the rancheria of *Povuu'nga* was located in the transition zone between the sheltered coast that extends north from San Pedro Bay and the exposed coast that extends southward to Newport Bay. In view of the geography and environment of *Povuu'nga*-Alamitos Mesa, it seems likely that the subsistence pattern for *Povuu'nga* most closely matches that of the sheltered coast; that is, the primary settlement or town was located near the coast, with secondary hunting-and-gathering camps situated inland (Hudson 1971:65). Furthermore, the wealth of food resources present in the *Povuu'nga*-Alamitos Mesa region may have resulted in a settlement pattern that approached the semi-permanent sedentary model, that is, a community that was continuously stationary over a period of years.

South and southeast of *Povuu'nga*-Alamitos Mesa lay an extensive saltmarsh-estuary environment that provided a ready supply of shellfish, migratory birds, and waterfowl, while the stretches of sandy beach separating the saltmarshes from the ocean offered sea mammals, seabirds, and shallow-water fish (Figure 3.8).

North and northeast of the mesa lay broad plains of seed- bearing plants interspered with riparian (streamside) environments that followed the Coyote Creek and San Jose-La Puente Creek drainages (see Figure 3.8). These riparian habitats were home to a variety of birds and small mammals that were

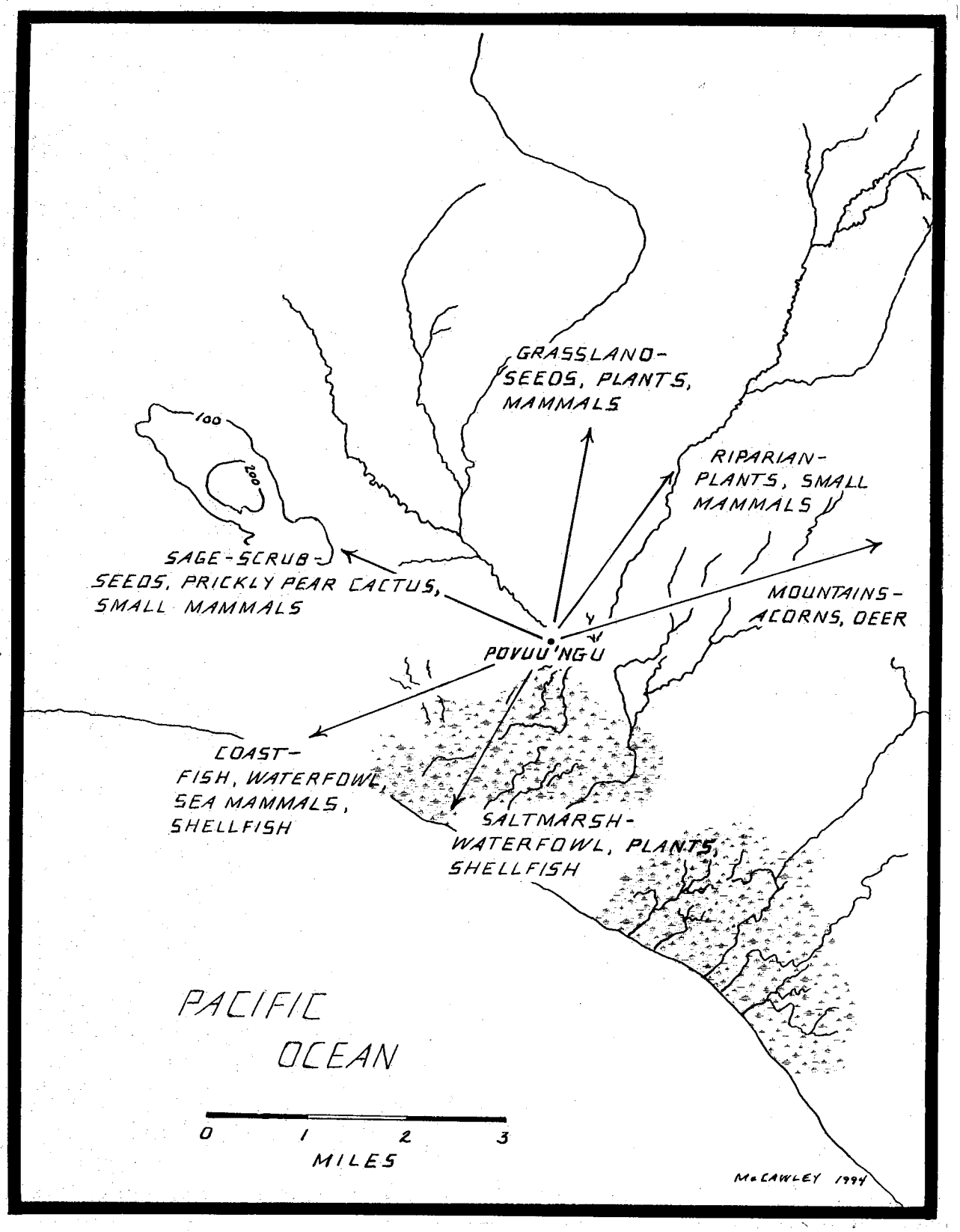

Figure 3.8. Potential food resources local to *Povuu'nga*.

hunted by the Gabrielino. In addition, the freshwater marshes that formed in low-lying areas northwest of the mesa provided a variety of plant materials for basketry as well as freshwater shellfish, amphibians, reptiles, waterfowl, and small mammals.

Chaparral and coastal sage scrub habitats would have covered much of Signal Hill west of the mesa, and Landing Hill to the southeast (see Figure 3.8). Small mammals hunted by the Gabrielino such as rabbits, squirrels, and rats could be found in these regions, and perhaps some deer as well. Prickly-pear cactus would also thrived in these habitats.

Some small oak groves may have existed in the plains to the north of *Povuu'nga*-Alamitos Mesa, however, acorns could also have been obtained from the Puente Hills to the northeast and the Santa Ana Mountains to the east, either through trade or gathering expeditions.

THE PHYSICAL SETTING OF *POVUU'NGA*

There are no surviving physical descriptions of *Povuu'nga*; therefore, the appearance of the town, or primary settlement, must be reconstructed from ethnographic data on the Gabrielino and Juaneno. J.P. Harrington located the town along the eastern slopes of *Povuu'nga*-Alamitos Mesa (Figure 3.9), noting that "the ra. [rancheria] is e. of adobe walk & includes it. It is the alfalfa field e. of adobe walk. The adobe walk runs n. & s. & is just e. of tennis court, & tennis court is due e. of Bixbee [Bixby] house" (Harrington 1986:R123 F232, comments in brackets by W.Mc.). In his annotations to Boscana's *Chinigchinich* Harrington wrote that...

> Due east of the front of the Bixby home and downslope from it lies the tennis court, while just east of the tennis court in the alfalfa field which constitutes the lowest reaches of the point of the hill, the ground is covered with shell debris -- the remains of the rancheria of Puvu', birthplace of Wuyoot and Tca_itc_ic. Just to the south of the area of the village is the old spring [Harrington 1933:149].

Harrington noted that as much as one-and-a-half or two acres of ground were covered with shell refuse (Harrington 1986:R123 F233); he also prepared a sketch map of this location (Harrington 1986:R104 F28; Figure 3.10). Although Harrington appears to have visited *Povuu'nga* on more than one occasion, the notes reviewed by the author describe only one visit and do not indicate whether Harrington surveyed the surrounding region for additional sites (Harrington 1933:148; 1986:R123 F230-235).

The primary settlement (town) of *Povuu'nga* could, in fact, have extended across much of the mesa with scattered clusters of houses, windbreaks, sweathouses, storage structures, ceremonial sites, playing fields, and work areas. Data concerning the areal extent of Gabrielino towns is not available; early explorers generally described the size of Gabrielino towns in terms of the populations they observed residing at the sites. Nor is there a generally accepted model for the arrangement of Uto-Aztecan settlements upon which to base a reconstruction of *Povuu'nga*.

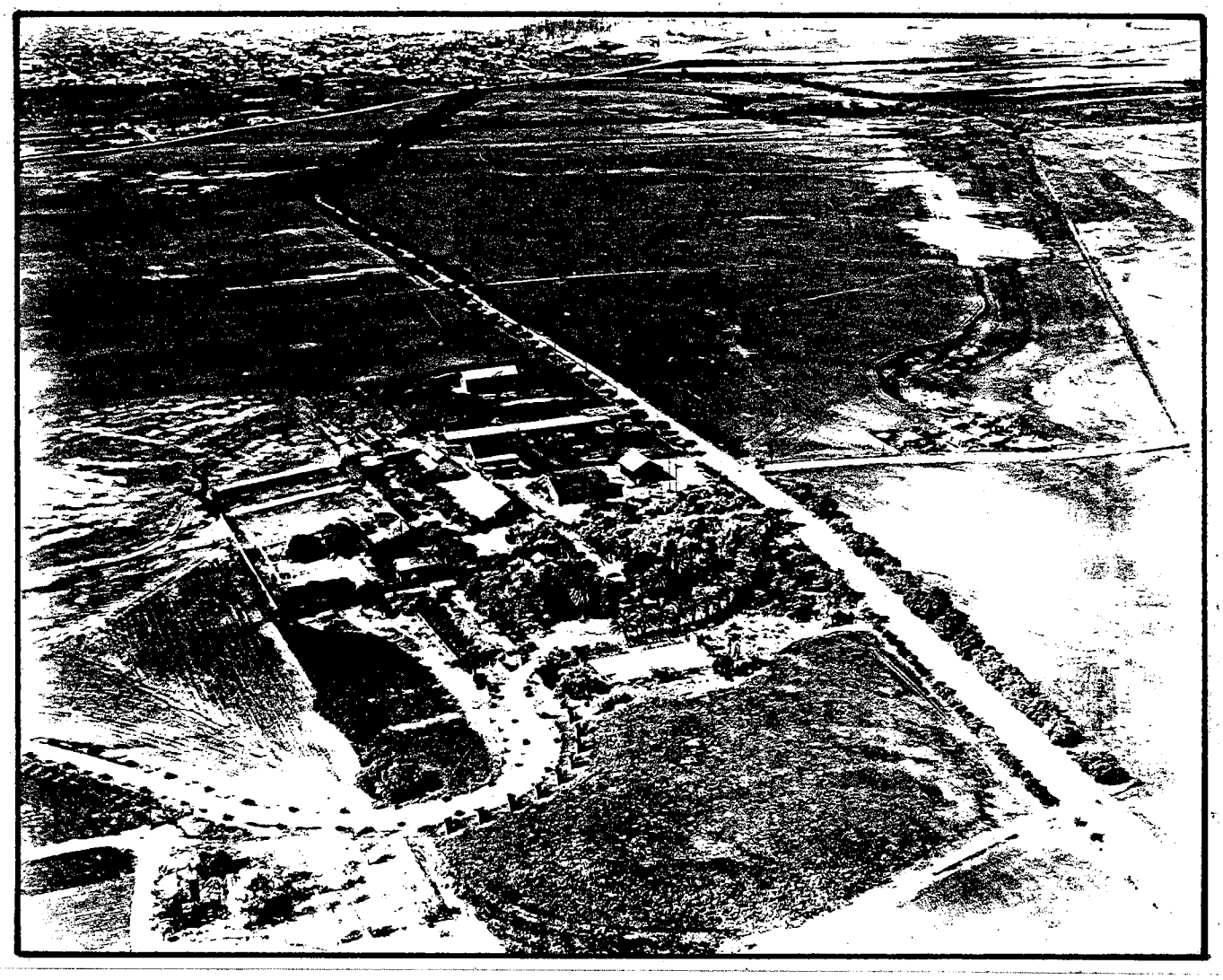

Figure 3.9. Aerial photograph of Rancho Los Alamitos taken in 1936 (courtesy of the Rancho Los Alamitos Historic Ranch and Gardens, Long Beach, CA).

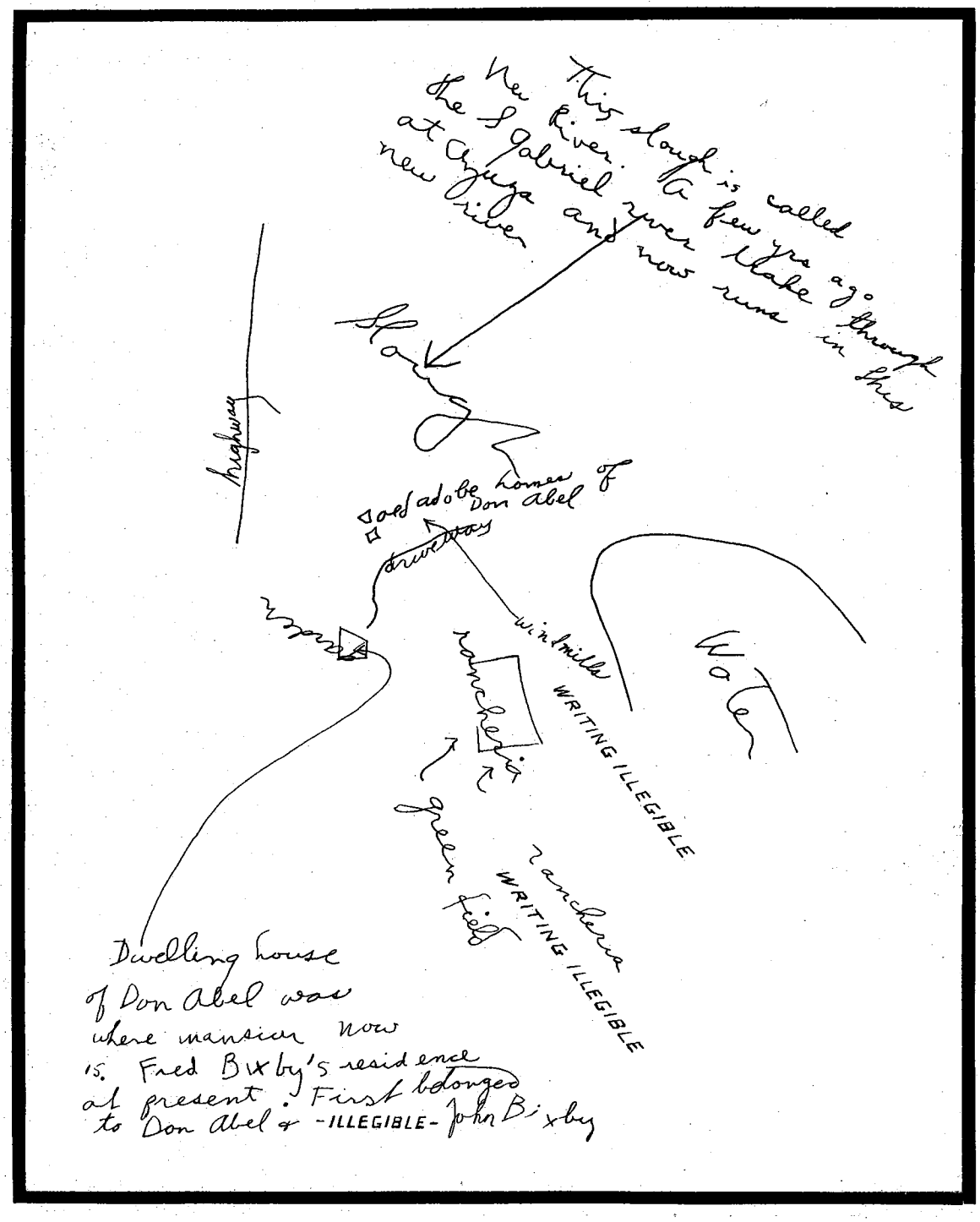

Figure 3.10. Reproduction of J.P. Harrington's sketch map of *Povuu'nga* (tracing by William McCawley) (see Harrington 1986:R104 F28).

However, data on village size and arrangement is available for another Uto-Aztecan group, the Cahuilla. Bean (1972:71) notes that

> when a village was located along a stream, the buildings were generally extended along the sides of both banks... Where several springs were located within a canyon, individual or extended family households were scattered at some distance from one another but in clusters near to the spring. A third arrangement was adopted in the desert areas where houses and other buildings were grouped around a spring in a two-to-three-square-mile area, the houses some thirty to sixty feet apart. A lineage of perhaps twenty-five to fifty houses might be scattered over a three-to-five-mile-area.
>
> The largest structure in a village, the ceremonial house, was usually centrally situated and near a permanent source of water.

One early writer, describing the Indians living in the vicinity of San Bernardino, noted that

> until the coming and domination of white men, prehistoric Indians did not lived bunched up in a village. Their villages were scattered out, and were at times, as in San Bernardino Valley, several miles long -- a few families around a spring here and a few there at another spring and so on [Shinn 1941:76].

It is unclear whether these patterns would also have applied to the coastal regions of southern California. Perhaps the greater availability of fresh water and food resources in the coastal regions encouraged the development of more compact settlements. Yet it is also seems possible that an as yet unidentified Uto-Aztecan model played a role in the arrangement of houses and other structures within the towns.

While readily acknowledging the limitations of the information available, the author will use the Cahuilla data to hypothetically reconstruct the arrangement of the houses and other structures in the town of *Povuu'nga*.

It is hypothesized that the Gabrielino town stretched across much of *Povuu'nga*-Alamitos Mesa, extending perhaps as far west as present Bellflower Boulevard. The total area encompassed above the 25 foot contour would be somewhat less than one square mile, a size which is not unreasonable considering the Cahuilla data. However, it is not suggested that this entire area was covered with houses or other structures. Instead, clusters of homes and other structures would be scattered across the mesa.

Following the Cahuilla models discussed above, the area located at the southeast end of the mesa near the spring probably experienced the longest period of occupation. The existence of a reliable source of fresh water and the availability of cottonwoods for building materials made this an especially attractive site. If more than one lineage occupied *Povuu'nga*, the largest or oldest lineage probably resided at this location.

The *yovaar* would also have been located near the spring, as the Cahuilla model suggests. The Gabrielino regarded springs and pools of water as sacred locations which were sometimes associated with supernatural creatures. Jose de los Santos Juncos told of a canyon near the town of *'Ahwiinga* in which there was a pool of water and "a white bear is seen at that place -- not a real bear but of the water. And there are viboras [vipers], many, at that place. And perritos [little dogs] -- they are perritos of the water" (Harrington 1986:R102 F329, comments in brackets by W.Mc.). The homes of the *tomyaar* and other community leaders were constructed near or surrounding the *yovaar*, (Harrington 1942:11; Boscana 1933:37), and these were the largest, sturdiest, and most lavish homes.

This reconstruction is consistent with the emphasis which Harrington's consultants placed on this portion of *Povuu'nga*- Alamitos Mesa. It is also consistent with the third building arrangement described for the Cahuilla. The region near the spring was the oldest and most ritually significant location within the town, and the *yovaar* was located nearby. However, this does not preclude the existence of other habitation areas.

Research with the mission registers suggests a minimum population for *Povuu'nga* of 60 to 90 people living in 12 to 14 households; the data do not permit defining an upper population limit (see Earle, this volume). A small population may have restricted settlement to the area near the spring, especially if only one lineage was dwelling at *Povuu'nga*. However, a population of more than 100 may have been more widely dispersed.

Referring once again to the Cahuilla model, it is hypothesized that another occupation site could have existed along the northern edge of the mesa, where a creek provided a second source of fresh water for at least part of the year. Homes could have been distributed along the banks of the stream as in the first Cahuilla arrangement described above. If more than one lineage resided at *Povuu'nga* the smaller or newer lineage may have occupied this second location. Furthermore, the Cahuilla model suggests that other outlying settlements associated with *Povuu'nga* could have been located a mile or more from the southeast portion of the mesa.

The appearance and construction of the homes and religious structures in the Gabrielino towns have been recorded by several writers. The earliest description of a Gabrielino *yovaar* was written in 1602 by Father Antonio de la Ascension, who described it as a

> place of worship or temple where the natives perform their sacrifices and adorations. This was a large flat patio and in one part of it, where they had what we would call an altar, there was a great circle all surrounded with feathers of various colors and shapes, which must come from the birds they sacrifice. Inside the circle there was a figure like a devil painted in various colors... At the sides of this were the sun and the moon [Wagner 1929:237].

Hugo Reid observed that each town "had a church, called *Yobagnar*, which was circular and formed of short stakes, with twigs of willow entwined basket fashion, to the height of three feet" (Reid 1852:21). Harrington's Gabrielino consultant Jose de los Santos Juncos reported that it was an "enclosure of tule mats 8 ft. high, round, 50 ft. diam. Only old men who knew were inside" (Harrington 1986:R104 F007).

Father Boscana described the *yovaar* as

> an enclosure of about four or five yards in circumference, not exactly round, but inclining to an oval. This they divided by drawing a line through the centre, and built another, consisting of the branches of trees, and mats to the height of about six feet, outside of which, in the other division, they formed another, of small stakes of wood driven into the ground. This was called the gate, or entrance... Inside of this, and close to the largest stakes, was placed a figure of Chinigchinich, elevated upon a kind of hurdle [Boscana 1933:37].

He went on to describe the *Chengiichngech* figure as

> formed from the skin of a *coyote*, or *gato montes* [mountain lion --W.Mc.], which was taken off with great care, including the head and feet. This they dressed quite smooth, like deer skin, but without taking off the hair. Inside of this sack were placed the feathers of particular kinds of birds, horns of deer, lion's claws, beaks and talons of the hawk and

> crow, and other things of this character. From the feathers of a species of hawk called *pame*... a kind of petticoat, such as was used by the captain and chiefs... was formed to dress their Chinigchinich. Inside of this sack, they placed some arrows, and upon the outside, a few more, with a bow. The figure resembled a live animal, and projecting from its mouth might be seen the feathers of the arrows [Boscana 1933:37,38].

Harrington noted that "Boscana clearly describes a California Bobcat skin quiver or young Valley Coyote skin quiver, hung on a framework, filled with arrows and with Indian valuables placed on or about it.... The mouth or throat part of the animal is left open for the putting in of the arrows or other commodities to be carried" (Harrington 1933:155, note 97). Harrington also provided a sketch of the *Chengiichngech* image prepared by his Luiseno consultant Jose Olivas Albanez (Figure 3.11).

In later years following missionization the plan of the *yovaar* seems to have been modified. The brushwork enclosure was still constructed, but the *Chengiichngech* figure was no longer represented. Instead, in the center of the clearing a firepit was dug, surrounded by two or three pot-rest stones. Harrington sketched and photographed such a sacred enclosure constructed by his Luiseno consultant, Juan Sotelo Calac. Harrington described it as "about 20 ft. diam, round, made of willow entwining, 4 ft. high, 2 4 or 5 ft. wide doorways, one at each side. Nothing inside but one fireplace in the center" (Figures 3.12 and 3.13). Other structures of religious purpose that might be erected in a Gabrielino town included a second enclosure maintained for "rehearsing in and teaching children... to dance" (Reid 1852:21).

Burial grounds were an important element of every community. One of the priests residing at San Fernando may have been describing a Fernandeno cemetery with funeral poles when he wrote of "race-courses" with "large circles in the center of which they raise a pole covered with bundles of feathers from the crow and which is adorned with beads" (Geiger and Meighan 1976:58). The Gabrielino are known to have marked graves with baskets, or with gravestones consisting of a sandstone slab upon which were etched figures commemorating the deceased (Merrian 1955:85; Heizer 1968:104,123, note 66).

The location of Gabrielino cemeteries in relation to the towns is unclear. According to Harrington, Chumash and Kitanemuk cemeteries were located outside, but near, the town (Harrington 1942:37). If this pattern also applied to the Gabrielino the cemetery at *Povuu'nga* would probably have been located west of the spring and outside the cluster of houses surrounding the *yovaar*.

Gabrielino homes were constructed differently according to their location. On the mainland houses were "made of sticks, covered in around with flag mats worked or platted" (Reid 1852:9). Along the coast and on the Channel Islands, however, houses might be erected on a framework of whale ribs, with coverings of sea-lion hides instead of rushes (Schumacher 1876:21; Kroeber 1925:634; Raab and Yatsko 1990:15; Harrington 1986:R102 F852).

Gabrielino homes averaged 12 to 35 feet in diameter, although the largest may have been 50 feet in diameter. In 1602 Father Antonio de la Ascension observed "houses made like cabins" which were covered with "a mat of rushes very closely woven... which they set up on some great upright forked poles. They are so spacious that each will hold fifty people... Neither rain nor the sun penetrates them" (Wagner 1929:237; see also Hudson and Blackburn 1983). The homes located at the southeast end of the mesa near the *yovaar* would have been the largest houses at *Povuu'nga* and would have been occupied by the *tomyaar* and other members of the elite.

Gabrielino houses were durable, earthquake-proof, and easily repaired. The walls of thatch and matting allowed air to circulate, while the steep pitch of the roof kept leakage during storms to a minimum. A hearth was located in the center of the floor, and a smoke hole with a removable cover

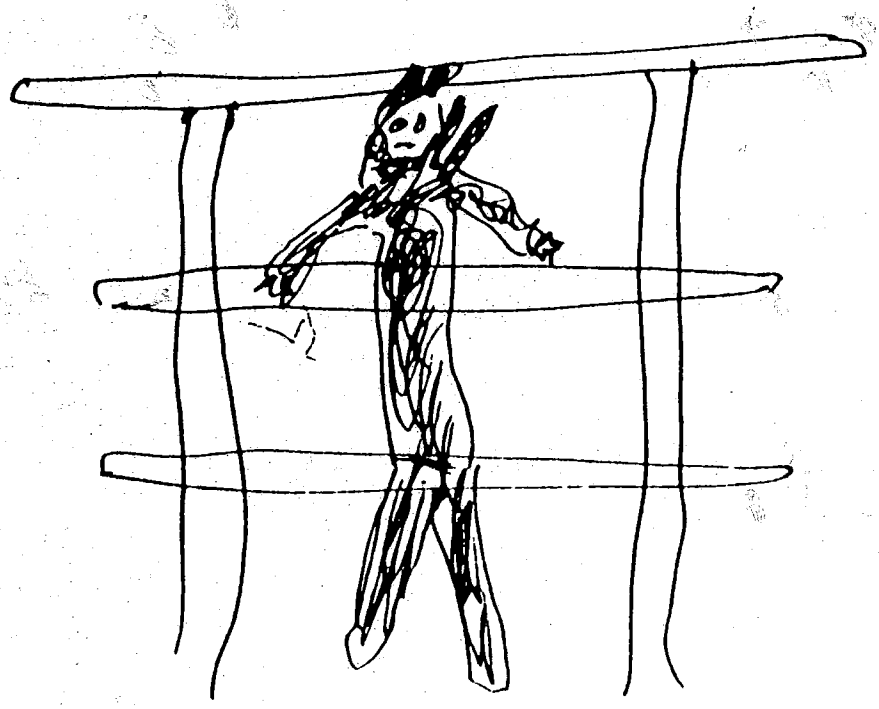

Figure 3.11. J.P. Harrington's reconstruction of the *Chengiichngech* figure (see Harrington 1986:R125 F490).

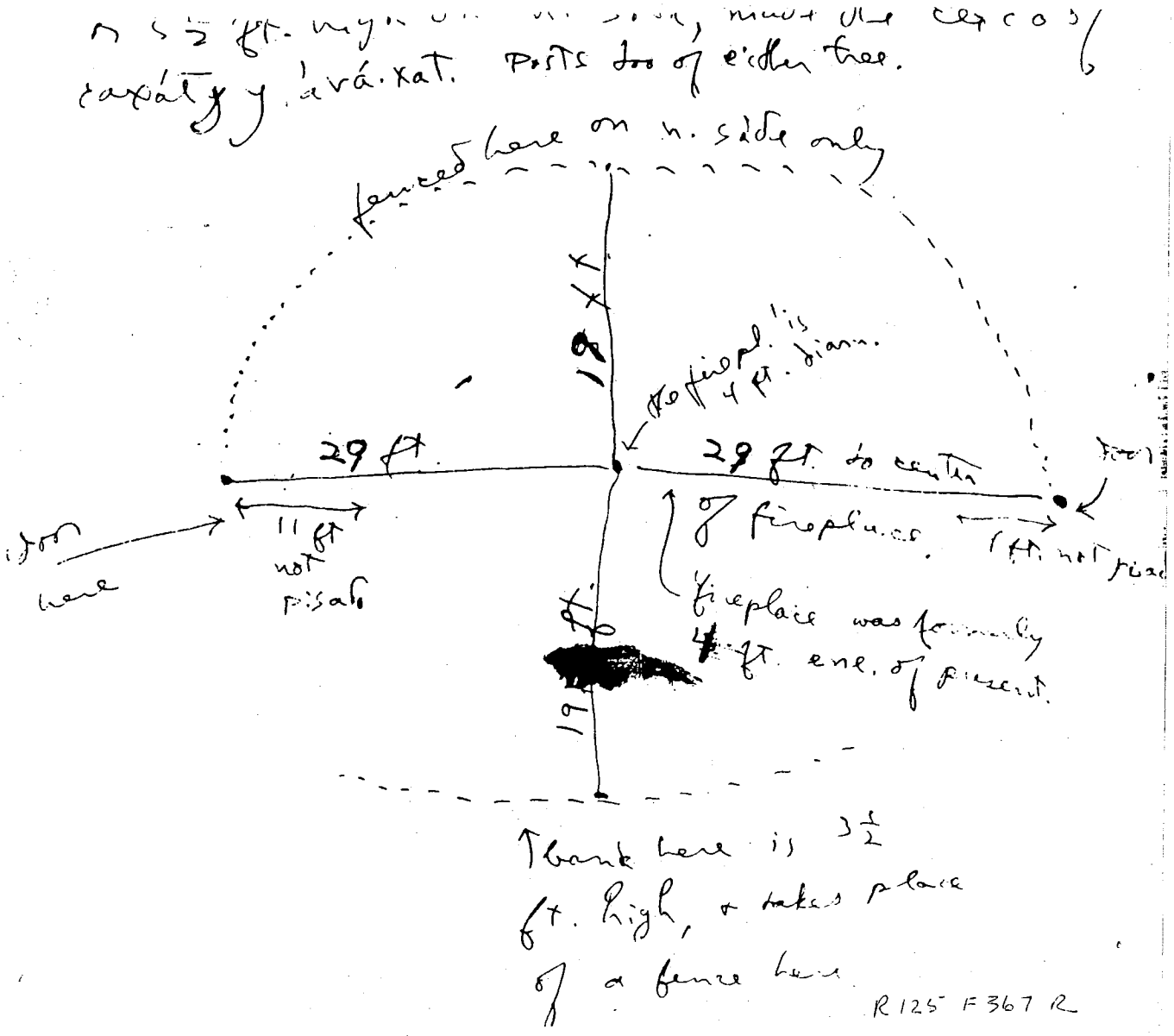

Figure 3.12. J.P. Harrington's sketch plan of a Luiseno sacred enclosure (see Harrington 1986:R125 F367).

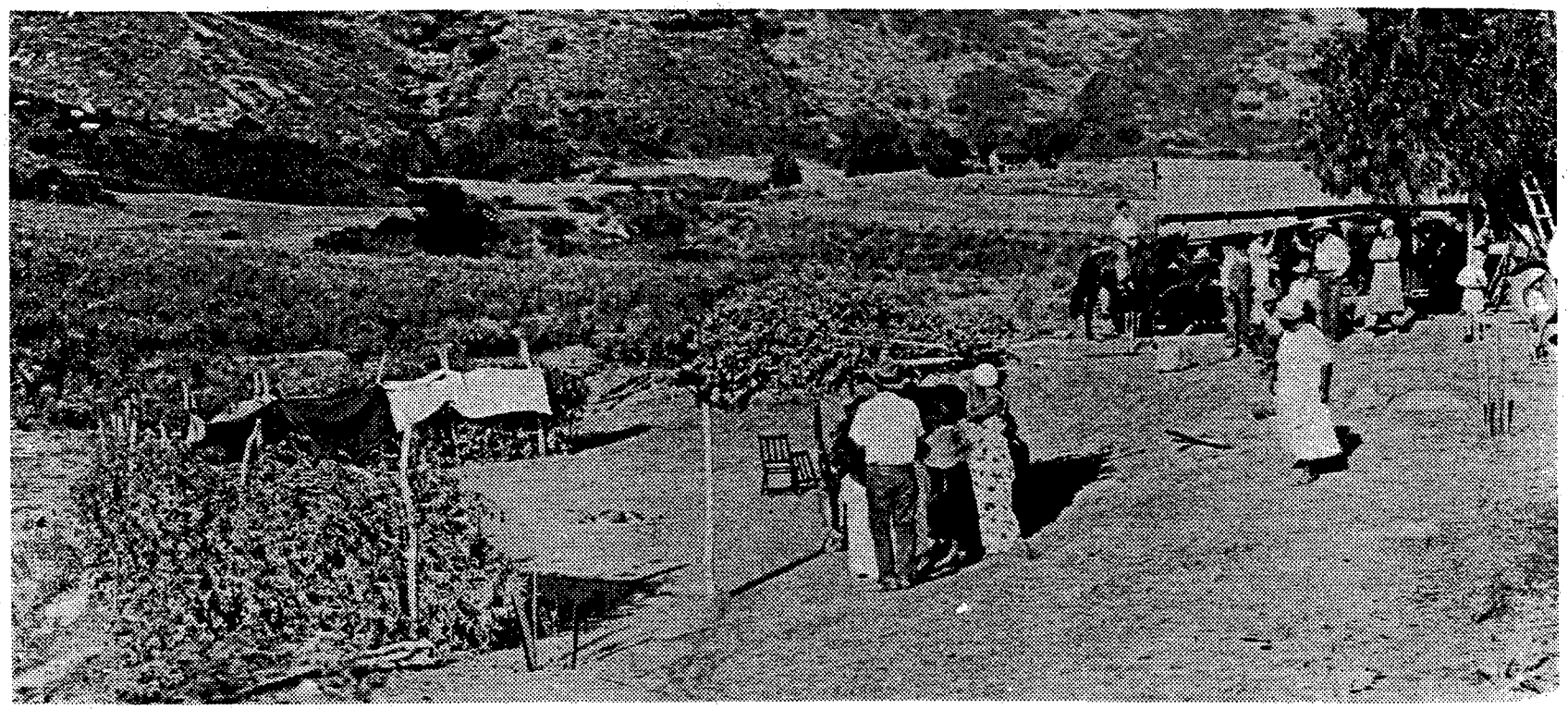

FIG. 88.—Wamkic, Indian temple, at the house of Chief Juan Sotelo Calac. Rincon Indian Reservation, Calif., fixed up and consecrated for religious fiesta. Photograph by J. P. Harrington.

Figure 3.13. Luiseno sacred enclosure photographed by J.P. Harrington, perhaps around 1932 (courtesy of the National Anthropological Archives).

was located in the apex of the dome. Doorways were carefully placed to avoid drafts from the north wind; tule mats served as doors (Harrington 1942:10).

The best time of year for home building was March, for then the willow bark was fresh and green and could be easily made into cord. After a level area was chosen and cleared of rocks and brush a tall pole was erected in the center of the clearing. A long string attached to the pole was used to draw a large circle on the ground; postholes were then dug a step apart along this periphery to hold the poles of sycamore or willow that would form the uprights for the walls (Harrington 1942:10; Hudson and Blackburn 1983).

Next, the uprights were erected, the lower ends of the poles having been charred to deter rotting, and then bent and lashed together to form a dome-shaped framework for the walls and roof. Horizontal crosspieces lashed with willow cord strengthened the walls, which were then covered with tule mats. On top of the mats a layer of tule or wild alfalfa, fern, or carrizo was added and held in place with another set of crosspieces (Harrington 1942:10; Hudson and Blackburn 1983).

Gabrielino houses were finished with care. The smokehole built into the apex of the roof could be covered in adverse weather. The doorway was framed with bundles of tule lashed to the wooden framework, while the door itself comprised tule mats. Inside the doorway a trench caught any runoff which might enter during a storm. The floor was of earth sprinkled with water and pounded hard with stones; a hearth was located in the center (Hudson and Blackburn 1983).

The interiors of Gabrielino homes were comfortably furnished. Tule mats covered the floor, and rugs and blankets of rabbit, bear, and sea otter hides provided added warmth. These blankets consisted of strips of hide woven on a string weft, although Hugo Reid wrote that "their covering at night consisted of rabbit skins, cut square and sewed together in the form of a bed-spread" (Reid 1852:24; also Bolton 1908:85; Harrington 1942:23).

Sleeping areas might be screened with reed mats, while mattresses were made from matting. Harrington noted that the mother of his Juaneno consultant Anastacia de Majel "had a 4 x 5 1/2 ft. matress that came down from ancient Ind. times - had it for years. The surface of it was woven hard, and the inside was soft & peludo (ev. = fluffy). It was woven of some kind of... grass, not of tule" (Harrington 1986:R128 F681).

Beds were constructed from forked willow poles driven into the ground to support a frame and mattress. Pedro Fages, describing such beds used by the Chumash, noted that "their beds are built high on bedsteads... of heavy sticks; a reed mat serves as a mattress, and four others as curtains, forming a bedroom. Beneath the bedsteads are the beds of the little Indians, commodiously arranged" (Fages 1937:48; Harrington 1942:10). Harrington's consultant Anastacia de Majel saw such a bedstead of sticks.

> Cut 4 horcones [forks], one clavado [fixed] at each corner. Then put 4 stout poles, for edges of bedstead, & then got sauz [willow] or sauco [elder], both have tough bark to use as barkstrips, & inf. knows just how to lash these poles to the crotches. Then put on slats, & soft stuff on top [Harrington 1986:R128 F682, comments in brackets by W.Mc.].

Other items of household furniture included stools made from whale vertebra and infant cradleboards padded with hides and furs. These cradleboards consisted of inverted U-shaped frameworks strengthened with crosspieces. A belt of hide or vegetable fiber held the infant in place. Hooks and pegs lashed to the framework of the walls provided convenient spots to hang bows, quivers, hide bags, and such (Harrington 1942:10; Hudson and Blackburn 1983).

Baskets were used for food preparation and a variety of storage needs. Large-necked water bottles twined from reeds and waterproofed with asphaltum were kept in each home. Small-necked globular trinket baskets served as storage for small items, and trash was dumped in open-twined waste baskets (Hudson and Blackburn 1983; Harrington 1942:20-23).

Outside the homes windbreaks were constructed from vertical poles covered with reed mats to form a straight or semicircular wall. These windbreaks provided convenient outdoor areas for food preparation or cooking. Also located near houses were the large coiled granary baskets in which acorns and chia seeds were stored. During the summer these granaries sat outside on platforms of lashed sticks supported on wooden poles driven into the ground; a mat or basket served as a lid. The raised platforms protected the granaries from rodents, and sometimes the baskets were waterproofed with asphaltum for protection against wet weather. During the winter, however, these granary baskets were usually moved indoors (Harrington 1986:R102 F501; 1942:9; Hudson and Blackburn 1983).

Semi-subterranean sweathouses with earthen roofs were used for ritual purposes as well as hygiene. Small, semi-circular sweathouses had roofs of poles covered with soil and were sometimes built into an earthen bank. A dry sauna was used to heat the interior, and since there was no smokehole the fire was built near the doorway. A nearby pool was used for rinsing. Sweathouses may have been located along the northern and eastern slopes of *Povuu'nga*-Alamitos Mesa, where fresh water from one of the creeks was available for rinsing.

The Gabrielino may also have had larger, ceremonial sweathouses consisting of earth-covered domes 12 feet or so in diameter. A small hole in the apex of the roof served both as an entrance and smokehole. A notched wooden pole served as a ladder (Kroeber 1925:628; Harrington 1942:9,11; Geiger and Meighan 1976:72,73; Hudson and Blackburn 1986).

Large level clearings were used as playing fields for races and games of hoop and pole or shinny. The Chumash often surrounded these fields with low fences of poles and mats or brush, and the Gabrielino may have done so as well (Geiger and Meighan 1976:58; Hudson and Blackburn 1986). The simple huts and windbreaks occupied by the poorer members of *Povuu'nga* were probably located on the outskirts of the town in the western portions of the mesa. During inclement weather these people may have been forced to seek shelter with other families. The menstrual huts used by the women may also have been located near this area.

POLITICAL ORGANIZATION, POPULATION, AND TERRITORY

The political structure and organization of *Povuu'nga* must in large measure be inferred from what is known about the Gabrielino and other Uto-Aztecan groups in general. The rancheria was occupied by one or more lineages, and the *tomyaar* of the largest or oldest lineage served also as the community leader. The *tomyaar* was aided in his duties by a Council of Elders, most of whom were probably also lineage leaders.

At its height a rancheria such as *Povuu'nga* could have supported a population of 100 or more individuals. Data compiled from mission registers at San Gabriel and San Juan Capistrano suggest a mininum population of 60 to 90 inhabitants living in 12 to 14 households. The data are not sufficient to establish an upper population limit, although it could have been higher than 90 (see Earle, this volume).

A rancheria such as *Povuu'nga* may have exercised use rights over a territory as great as 30 square miles. However, two important factors must be considered in regard to this territorial model.

First, the estimate of 30 square miles of territory per rancheria was developed by White (1963) for inland Luiseno communities for which deer and acorns were dietary staples. This territorial model has not been evaluated for coastal communities which relied more heavily upon marine food resources such as shallow and pelagic (deep-water) fish, shellfish, and sea mammals (White 1963:115-118). Raymond White, who developed the rancheria model for the Luiseno, commented that

> little or nothing is known about the coastal Juaneno-Luiseno... Consequently, the estimates... come from an examination of the economy and terrain of the interior. There seems little reason to assign a full 30 square miles of territory to each coastal rancheria [White 1963:119].

A second factor that must be considered is how this settlement pattern might apply to the *Povuu'nga* region. According to ethnographic data the Gabrielino town of *Tevaaxa'anga* was located in north Long Beach approximately six miles northwest of *Povuu'nga*, on or near the site of the adobe headquarters of Rancho Los Cerritos. A second town, *'Ahwaanga*, may have been located in the vicinity of Twentieth and Henderson Streets near downtown Long Beach, a little more than five miles northwest of *Povuu'nga* but only two miles south of *Tevaaxa'anga*. The nearest recorded Gabrielino rancheria south of *Povuu'nga* is *Lukupa*, located approximately 10 to 12 miles to the southeast.

The available ethnographic data suggest, therefore, that rancherias in the Long Beach region could have controlled territories of as much as 30 square miles. Unfortunately, there is presently no way to verify the completeness of these data; other communities that went unrecorded by ethnographers may have existed in this region. For example, a Gabrielino settlement of unknown size and extent was located a few miles north of *Povuu'nga* in the Los Altos district of Long Beach (Simpson 1953; Bates 1972; Long Beach Public Library).

As a ritual center, the community of *Povuu'nga* would have maintained extensive ritual, economic, political, and social ties to neighboring communities. These ties would often have been formalized and strengthened by marriages between the inhabitants of *Povuu'nga* and the allied rancherias.

Such ties are documented in the mission registers recording gentile (pre-mission) marriages between the inhabitants of *Povuu'nga* and the Gabrielino communities of *Chaawvenga* on San Pedro Bay, *Jaisobit* at Rancho Los Coyotes, *'Ashuukshanga* near the mouth of Azusa Canyon, *Hotuuknga* and *Totoonga* on the Santa Ana River, *Kengaa* on Newport Bay, and *Jusicabit* (location unknown), as well as the Serrano community of *Amuscupuabit* in Cajon Pass (Figure 3.14). Mission marriages, which may also follow pre-mission marriage patterns, document ties with the Gabrielino communities of *Shevaanga* near San Gabriel, *Huutnga* near El Monte, and *'Ahwiinga* near Whittier Narrows (see Earle, this volume). It is interesting to note that there are no documented ties between *Povuu'nga* and the nearest rancherias. *'Ahwaanga*, *Tevaaxa'anga*, and *Lukupa*.

Relations between Gabrielino communities was not always peaceful, however, as several Gabrielino accounts testify. For example, in recounting one version of the Gabrielino creation myth Father Boscana wrote

> out of the confines of a rancheria, called Pubuna... came the monster, Ouiot, and the Indians at the present time preserve the account in their annals. At that time, all the inhabitants were at peace, and quietly following their domestic pursuits, but Ouiot, being of a fierce disposition, a warrior, ambitious and haughty, soon managed to gain a supremacy over many of the towns adjoining that where he originated [Boscana 1933:32].

A second oral account with a martial theme was recounted by Harrington consultant Jose de los Santos Juncos to describe the founding of *Povuu'nga* and the other local coastal settlements. The story describes a sorcerer's war which took place between the Indians living at a place known as *X_rvut*,

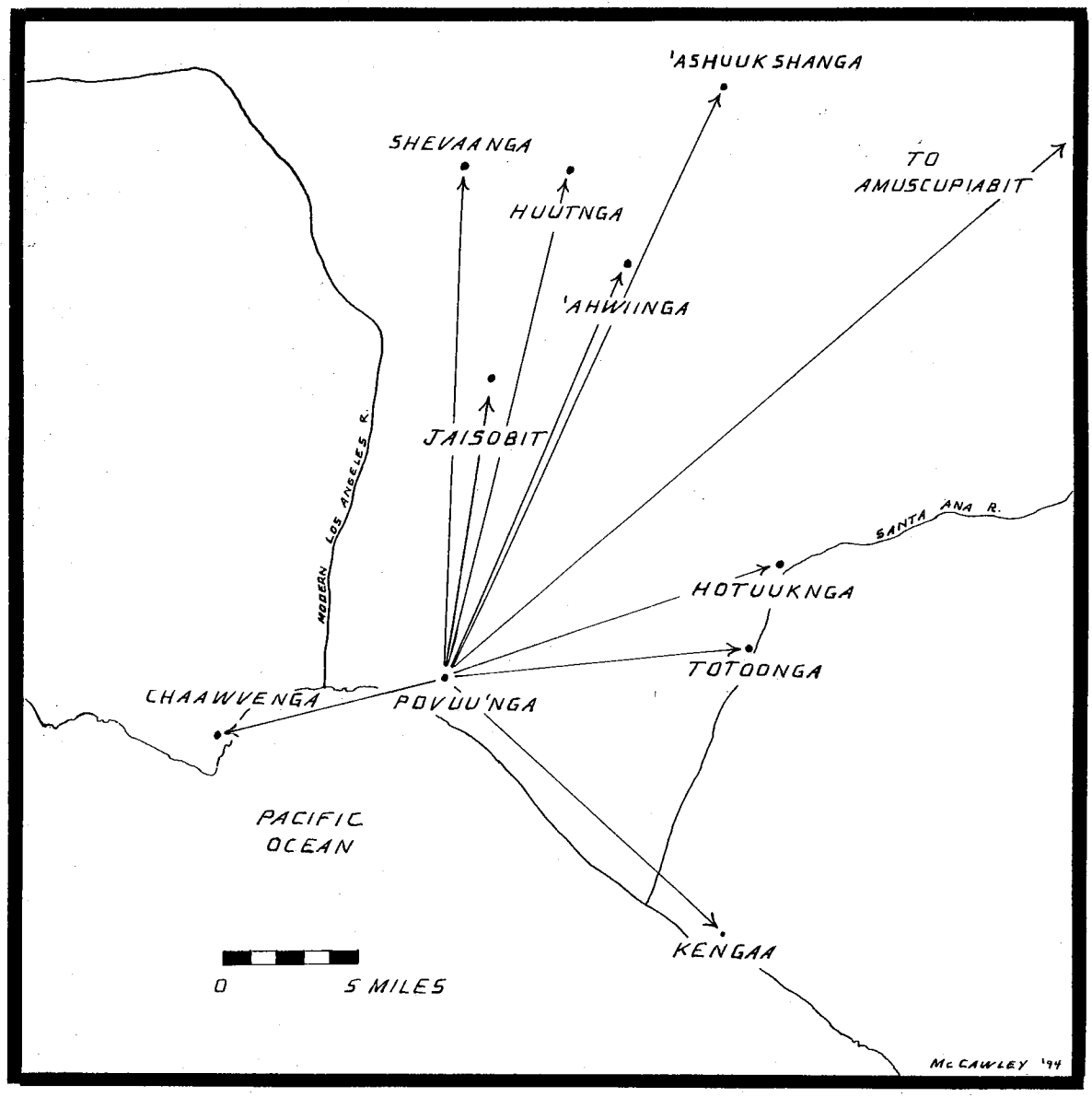

Figure 3.14. Marriage ties between *Povuu'nga* and other Gabrielino rancherias as documented in the Mission registers.

located near Whittier Narrows, and the coastal Indians. According to Jose

> the Indians originally all lived together, but strife arose between them and those of S. G. [San Gabriel] drove the other faction down to the orilla del mar [edge of the sea], by Los Cerritos, Los Alamitos, etc.. Then began the witchery contest...
>
> There was a sort of war between the Inds. at X_rvut and those at Los Cerritos, etc., and the latter made it rain by their wishing. The Indians were starving -- could not hunt rabbits or anything... So the magicians of X_rvut made wind (vienta) and turned it and at [the] very first even it was so strong that it rose up & opened the sky and blew the rainclouds asunder. It blew the jacales of the Indios there of the orilla del mar into the sea. And then it blew a lot of the Indians themselves into the sea... When the two groups of Indians made peace, many of both parties had been killed [Harrington 1986:R105 F564,565, comments in brackets by W.Mc.].

Jose's story echoes a number of early historic accounts which allude to warfare between the Indians living in the interior and those of the coast. Father Pedro Benito Cambon, who was present at the founding of Mission Vieja in 1771, reported that the rape of a local *tomyaar's* wife by one of the Spanish soldiers enraged the Gabrielino, who launched a series of abortive raids against the newly-established mission. Of special interest is Father Cambon's entry for October 11, 1771 (as translated by Thomas Workman Temple), which describes how the Spaniards "awoke to find plumes of smoke signals along the entire horizon. We investigated and learned that this was a general pow-wow of all the surrounding rancherias, convoked to make peace between those of the sierra and those from the coast, mortal enemies up to this time" (Temple 1960:159).

Father Francisco Palou, writing in 1783, observed of the Indians living at San Gabriel that

> the Indians are very poor, on account of the scarcity of wild seeds and game. And they lack fish because they are about eight leagues distant from the beach. This distance is all level country populated with many villages which maintain among themselves constant wars, making it impossible for them to go to fish, although they say there is a very suitable beach on the bay of San Pedro, where barks can anchor in safety [Bolton 1926:219,220].

The broad similarity between the Gabrielino oral tradition and the early historical notes suggests that a long-enduring pattern of conflict existed between the Indians of the interior and those of the coast, including *Povuu'nga*. This most likely involved open warfare as well as ambushes and frequent incidents of trespassing onto lineage-owned hunting and gathering areas. Intense economic competition may have been the primary factor in this enmity.

RITUAL AND ECONOMIC ORGANIZATION

The economic organization of *Povuu'nga*, much like the community's political structure, must be inferred from the limited ethnographic data on the Gabrielino. As a coastal rancheria, *Povuu'nga's* economy was undoubtedly oriented toward the sea. Fishing, sea mammal hunting, and shellfish gathering would have been important activities, although hunting and plant gathering on the adjacent prairie would also have been economically worthwhile. Furthermore, *Povuu'nga's* importance as a ritual center insured that trade was a significant economic factor in obtaining resources not available locally.

Following the model outlined above, the *Povuu'nga*-Alamitos Mesa region would define the southernmost extent of the sheltered coast zone. According to Hudson's (1971) model, during the fall

and winter occupants of communities along the sheltered coast separated into small family units and dispersed into the interior to collect acorns, hunt, or gather plant foods; they returned to the coast during the spring and summer. A different pattern applied to the region further south, where the coastal sites comprise temporary shellfish gathering camps occupied during the winter by individual family groups. During the spring, summer, and fall these families returned to their primary settlements located on the inland prairie.

It remains unclear whether the occupants of *Povuu'nga* followed the subsistence pattern of the sheltered coast, or melded the two strategies. Assuming that the rancheria followed a "central-based wandering" settlement pattern, it would seem that the rancheria's unique location offered its inhabitants the option of either spending fall and winter at shellfish camps along the coast or traveling inland to hunt and gather plant foods. If, however, the community's settlement pattern approached a "semi-permanent sedentary" pattern it is possible that little seasonal dispersement was necessary to support the town's economy (see the discussion of regional settlement patterns in part two, chapter two, "Regional Settlement and Subsistence Patterns").

Trade also had an impact on the settlement and subsistence patterns of *Povuu'nga*. The community's importance as a ritual center made it a focus of regional economic and ritual activity; in turn, this activity increased the range and supply of foods and materials available to the inhabitants of *Povuu'nga*. Fish, shellfish, sea-otter skins, shell beads, and other goods may have been traded with inland Gabrielino communities in return for acorns, venison, deer hides, and exotic lithic materials for toolmaking. Trade with island rancherias may have included an exchange of mainland plant and animal foods for soapstone as well as roots and bulbs (see part two, chapter four).

Povuu'nga as a Ritual Center

There is clear ethnographic data attesting to *Povuu'nga's* importance as a ritual center. Father Boscana, in recounting the Gabrielino creation myth, described how upon the death of *Wewyoot*

> they sent off couriers to all the towns and settlements which Ouiot had governed, summoning the people to the interment of their grand capitan. In a few days, so great a collection had assembled that the city or town of Pubuna could not contain them and they were obliged to encamp in the outskirts.

Father Boscana went on to write that

> Many years, and perhaps ages, having expired since the death of Ouiot, there appeared in the same town of Pubuna, one called Ouiamot, son of Tacu and Auzar... And this was the god, Chinigchinich, so feared, venerated, and respected by the Indians, who taught first in the town of Pubuna...
>
> The manner in which he commenced to dogmatise... was as follows: One day, at a very large congregation of the people, he danced before them, adorned in the robes which have been already described, with his flesh painted black and red, and calling himself Tobet [Boscana 1933:32,33].

Further evidence for *Povuu'nga's* importance as a ritual center and gathering place is provided by J.P. Harrington's Juaneno consultant Jose de la Gracia Cruz, who recounted the following tale.

> Two quimicos [sorcerers --W.Mc.] were going from Pobuna to another rancheria on their way from one fiesta to another. They were brothers, the one was stronger (mas

> fuerte, i.e. a better quimico than the other). They were passing over a plain between two mountains and one of them saw a bear in the barranca at the foot of one of the mountains, which stood up and looked at them or a moment and then started across the plain toward the other mountain. The lesser quimico said to the stronger "surely that is Cheng-ee-ching-itch, don't you do something to him? Then the stronger quimico gave three shouts at the bear and the bear immediately fell down as if he were shot. His hind legs dragged on the ground and he crawled along by means of his forelegs, and began to scratch the earth with them to throw the dirt up on his back where he was wounded. Presently the earth cured him and he arose on all fours and went away [Harrington 1986:R121 F566].

A note by J.P. Harrington, made during a visit to *Povuu'nga* with Father O'Sullivan and Magdalena Murillo, noted that *Povuu'nga* was the "meeting pl. [place] of the Ind., Cah. [Cahuilla?] & Tehachapi tribe. The only spring is the one here" (Harrington 1986:R123 F233, comments in brackets by W.Mc.).

Povuu'nga most likely served as a regional center for the south-coastal Gabrielino as well, perhaps, as the Juaneno. Important seasonal rituals such as the mourning ceremony, the eagle-killing rite, and the solstice fiestas would have been held at *Povuu'nga*. Reciprocal ritual and economic ties may have united this rancheria and the Gabrielino communities of *Chaawvenga*, *Shevaanga*, *Huutnga*, *'Ashuukshanga*, *'Ahwiinga*, *Hotuuknga*, *Jaisobit*, *Totoonga*, *Jusicabit*, and *Kengaa*, as well as the Serrano community of *Amuscupuabit* (see Earle, this volume, for data concerning marriage ties between *Povuu'nga* and other communities).

There is evidence for similar regional centers within the Gabrielino territory. The community of *Jucjauynga*, located at the western end of the San Fernando Valley near the mouth of Bell Canyon, may have hosted Gabrielino-Chumash rituals at the time of the solstices. An impressive rock art site at Burro Flats, a short distance west of *Jucjauynga* in the Simi Hills, probably served as a ceremonial site for these rituals.

The Gabrielino rancheria of *'Ahwiinga*, situated near La Puente, may also have served as a provincial center. As noted earlier in this paper, an entry in the San Gabriel Mission baptismal records mentioned a *tomyaar* by the name of Matheo "whom the other rancherias regard as their chief" (quoted in Johnston 1962:143).

What distinguishes *Povuu'nga* from these other regional centers is the community's association with two specific supernatural beings, *Wewyoot* and *Chengiichngech*, and the wealth of ethnographic data on the rancheria recorded by Father Boscana. However, the extent to which this distinction is the result of Boscana's account remains unclear. Was *Povuu'nga* truly unique, or does it merely seem so because we know so little about the other communities? Was *Povuu'nga* widely accepted among the Gabrielino as having a unique association with *Wewyoot* and *Chengiichngech*? Or might other Gabrielino ritual centers also have claimed close ties to these supernatural beings? Were other communities similarly associated through ritual and tradition with different deities?

The ethnographic data are too limited to resolve these questions; however, it seems safe to assume that some regional variation in rituals and oral traditions existed. It is also clear that prior to the Mission period *Povuu'nga* was well established as the primary ritual center among the south-coastal Gabrielino.

THE ABANDONMENT OF *POVUU'NGA*

In 1769 the Spanish government, spurred on by fears of Russian and English incursions in the Pacific northwest, initiated the colonization of Alta California. Spanish expeditions had previously visited California, most notably those of Cabrillo in 1540 and Sebastian Vizcaino in 1602. Now, however, they sought to make their presence permanent.

Under the leadership of Gaspar de Portola an expedition successfully established permanent outposts in San Diego and Monterey. During the following 53 years a chain of missions was created which extended from San Diego to San Francisco. Most important from the standpoint of Part 1 were the missions of San Gabriel Archangel, founded in 1770, and San Juan Capistrano, founded in 1775.

The Spanish mission was of a type known as a *reduccion*, its purpose being to "reduce" or consolidate the local Indians into one central community. Each mission was a sprawling community in which hundreds, sometimes thousands of Indians lived and worked. Often these populations included Indians from several different language groups.

According to the mission records the earliest baptism of a Gabrielino from *Povuu'nga* took place in 1782. Between 1785 and 1805 thirty-two individuals from *Povuu'nga* were baptized at San Gabriel Mission; another seven were baptized at San Juan Capistrano between 1782 and 1788. The latest baptismal record for an occupant of *Povuu'nga* was recorded in 1805, and this date most likely approximates the final abandonment of the rancheria (Merriam 1968:116,135).

These baptisms represent only a small fraction of the rancheria population, and the fate of the remaining occupants is unclear. Although the Spanish missionaries apparently paid little attention to the coastal rancherias, there may have been greater contact with the crews of Spanish sailing vessels bringing supplies from Mexico. As a result of these contacts epidemics may have severely reduced the population of the community. A measles epidemic reportedly struck Santa Catalina and Santa Cruz between 1803 and 1806, severely reducing the populations of both islands (Bancroft 1886:34), and this outbreak may have reached the mainland and affected coastal settlements such as *Povuu'nga*.

The depopulation of the island rancherias would also have had a severe impact on the economies of the coastal communities to which they were tied. Trade and ritual exchange would have declined, and *Povuu'nga's* viability as a regional center would have been weakened. Some of the surviving inhabitants of *Povuu'nga* may have left the rancheria to seek employment at one of the local ranchos established by the Dominguez and Nieto families.

Finally, sometime around 1805, the ritual and ceremonial objects maintained at *Povuu'nga* may have been destroyed or buried and the remaining population dispersed. The abandonment of *Povuu'nga* signifies the final collapse of the economic and social integrity of south coastal Gabrielino society; the fate of the Indians was now irrevocably tied to the missions and the ranchos. By the time Father Boscana wrote *Chinigchinich*, in 1822, *Povuu'nga* had probably been abandoned for 15 years or more -- *Povuu'nga*- Alamitos Mesa had become the headquarters of Rancho Los Alamitos, one of six land grants carved out of a much larger grant awarded to Manuel Perez Nieto in 1784.

CHAPTER 4
RANCHO LOS ALAMITOS

William McCawley

THE NIETO-FIGUEROA PERIOD

Manuel Perez Nieto and the Los Nietos Grant

On September 8, 1771, two years after Portola's expedition founded the first permanent settlements in Alta California, Mass was celebrated for the first time at Mission San Gabriel. The first mission site was located near present Whittier Narrows at a place later known as Mission Vieja. Three years later the mission was relocated to its present site, where the potential for agriculture was greater (Temple 1960; Engelhardt 1927:9).

The missions were not the only Spanish institutions established in California during those early years of colonization. In 1781 the pueblo of Nuestra Senora la Reina de los Angeles de Porciuncula was founded by colonists from Sonora and Sinaloa, and three years later the first private grants of land were issued by Governor Pedro Fages. Fages issued these grants in 1784 to several of the soldiers who had accompanied Portola in 1769. Juan Jose Dominguez received Rancho San Pedro west of present Long Beach; Jose Maria Verdugo received Rancho San Rafael west of Arroyo Seco; and Manuel Perez Nieto received a tract known as *La Zanja de Zacamutin* (Cleland 1941:7-15; Gillingham 1961: 43,44). Of primary concern is the grant received by Manuel Perez Nieto, who eventually became the first non-Indian to hold *Povuu'nga*-Alamitos Mesa.

The location of Nieto's *La Zanja* grant is unclear. The rancho was reportedly situated "on the highway from said Mission [San Gabriel --W.Mc.] along by the oak tree," and "about three leagues distant from the Mission of San Gabriel, on the road to the Royal Presidio of San Carlos of Monterey." Robert Glass Cleland referred to the rancho as *La Zanja del Puente* and apparently identified it with the Los Nietos grant. However, a recent review of the historical literature by Pamela Young suggests that *La Zanja* lay "northeast of Rancho Los Alamitos, possibly between the San Gabriel Mission and the Spanish-period Rancho Encino" (Zamorano 1833, quoted in Young et al. 1989:100; Cleland 1941:7,282, note 10; Young et al. 1989:100,129, note 6).

The grant of *La Zanja* ultimately proved too small to support Manuel Perez Nieto's expanding herds, and in 1790 he moved to a new tract of land that eventually became known as Los Nietos. The boundaries of this grant were the San Gabriel River in the west, the Santa Ana River in the east, the Pacific Ocean in the south, and "the main road leading from San Diego along the hills to San Gabriel" in the north. As originally defined, the grant encompassed 300,000 acres, although it was later reduced to approximately half that size (Cleland 1941:8).

A number of conditions attached to these early grants. They must not "encroach upon the four square leagues" of land allotted to the Pueblo of Los Angeles, or "upon the holdings of a mission, or upon any Indian rancheria." The holder of each grant was also required to construct a house on the property, stock the land with at least 2,000 cattle, and maintain enough vaqueros and sheepherders to control the stock (Instructions issued by Galindo Navarro on October 27, 1785, quoted in Cleland 1941:7).

Nieto established his homestead at a location which became known as Los Nietos. According to J.P. Harrington

> the oldest timers say that the Los Nietos region was anciently a plain of barren appearance, without a tree, except willows along the river, with liveoaks on the Puente Hills only, but with plenty of water. There were several lakes [Harrington 1933:204].

Nieto's adobe home, later owned and occupied by an American named Lemuel Carpenter, was washed away during the flood of 1867 when the New San Gabriel River began flowing into Alamitos Bay. It was originally located less than a mile south of present Slauson Avenue where the San Gabriel River now has its channel (Harrington 1933:207).

Nieto cultivated only 1/4 section of land, or about 160 acres, much of which may have been vineyard (Harrington 1933:205; 1986:R126 F121). Nieto's herds of horses and cattle, however, were enormous; according to testimony presented to the American Land Commission they numbered fifteen to twenty thousand head (Cleland 1941:283, note 16). Water for Nieto's home and herds may have been obtained from the New San Gabriel River. As discussed above, even before the flood of 1867 some water was probably flowing in this channel.

Labor Patterns and Indian Populations at Los Nietos

Unfortunately there is little documentary evidence for the labor patterns at Rancho Los Nietos during these early years. Gabrielino from neighboring rancherias were probably recruited to work at the rancho. Harrington reported that

> Jose Manuel Nieto evidently had Indian servants on the ranch, for Mr. Rhodes recalls that he found in one document that there was objection made to Indians from Los Nietos ranch coming to Los Angeles town and raising disturbances from drinking [Harrington 1933:205].

Labor patterns most likely followed those that have been documented for other parts of the Los Angeles region during these early years. In the Pueblo of Los Angeles, Indians provided most of the agricultural labor such as plowing, hoeing, and weeding, as well as planting, harvesting, and grinding. They were paid for their services in goods such as clothing, grain, cotton yardage, beads, and tools, especially knives and hatchets. Indians also provided many of the utilitarian items required by the settlers such as baskets, trays, soapstone bowls and pots, tanned deerskins, sea-otter pelts, and rabbit-skin blankets (Mason 1975:94). On the ranchos Indians served as "cowherds, cattlemen, irrigators, bird- catchers, foremen, horsemen, etc." (Engelhardt 1927b:5).

Indians who worked at the ranchos might also cultivate plots of land for their own use. In 1795 Father Vicente de Santa Maria observed non-Christian Indians living near Rancho Verdugo cultivating fields of watermelons, sugar melons, beans, and corn. Father Vicente recognized that the economic opportunities provided by the ranchos represented a serious threat to the mission's goal of recruiting and converting the local Indians. He noted sourly that

> the whole pagandom, between this Mission [San Buenaventura --W.Mc.] and that of San Gabriel, along the beach, along the camino real, and along the border of the north, is fond of the Pueblo of Los Angeles, of the rancho of Mariano Verdugo, or the rancho of Reyes, and of the Zanja. Here we see nothing but pagans passing, clad in shoes, with sombreros and blankets, and serving as muleteers to the settlers and rancheros... Finally, these pagan Indians care neither for the Mission nor for the missionaries [Engelhardt 1927b:9].

A priest stationed at San Gabriel reported that in the Pueblo and on the ranchos "both men and women who are pagans assist in the work of the fields. Also they are employed as cooks, water carriers and in other domestic occupations." As payment the Indians received "a half or a third of the crops" and remained "constant in the service of their masters during the season of planting and harvesting" (Geiger and Meighan 1976:129).

Rancho Los Alamitos During the Nietos-Figueroa Period

Because of its enormous size it seems likely that the Los Nietos grant was always managed as several smaller ranchos, and this probably served as a basis for the division of the grant among Manuel's widow and four sons upon the death of Manuel Perez Nieto in 1804. Although Manuel's eldest son, Juan Jose, reportedly "took over" Los Alamitos, historical evidence suggests that the occupancy and use of the rancho at this early date was limited at best.

Testimony given to the United States Land Commission in 1854 suggests that Juan Jose may have built the first adobe on *Povuu'nga*-Alamitos Mesa around 1806; however, this is not conclusive. There is no clear evidence, for example, that Juan Jose ever occupied Los Alamitos; in fact, he repeatedly gave as his home Santa Gertrudes, the Nieto rancho containing the original homestead. Furthermore, a Report of the *Ayuntamiento* (town council) of Los Angeles dated June 21, 1833, declared that the land was "vacant, since there is only found upon it, some wild cattle and horses, belonging to different owners, the smallest portion of these belonging to the said Nieto". These findings were in response to an unsuccessful petition by Juan Patricio Ontiveras for rights of ownership to Los Alamitos (Robinson 1966:27; Report of the *Ayuntamiento* quoted in Young et al. 1989:102, see also pages 101,109-111,131 note 16).

Letters by Juan Jose dated September 15, 1833, and July 3, 1834, refuted the *Ayuntamiento's* findings. In his letters Nieto claimed that the presence of Nieto cattle on the land proved occupancy; he also asserted that the spring located on *Povuu'nga-* Alamitos Mesa was crucial to successful ranching operations. Although the dispute was eventually settled in Nieto's favor, the legal challenge instituted by Ontiveras may have led Juan Jose to request a formal division of the Nieto grant among the surviving heirs. On July 27, 1833, Juan Jose received Governor Figueroa's permission for the division of the remaining 167,000 acres of the grant (Young et al. 1989:102,103).

The Los Nietos grant was divided into six portions. Santa Gertrudes, which contained the family homestead, went to the widow of Manuel's youngest son Antonio Maria. Los Cerritos went to Maria Manuela Antonia, Manuel's only surviving daughter, while Las Bolsas went to the widow of Jose Antonio. Juan Jose received Los Alamitos, Los Coyotes, and the much smaller rancho Palo Alto (Young et al. 1989:103). Surprisingly, little more than a year later Juan Jose sold Los Alamitos to Governor Jose Figueroa for the bargain price of $500; it has been suggested that the rancho was a bribe to the governor for his cooperation in the division of the Los Nietos grant (Cleland 1941:190).

Following his acquisition of Los Alamitos in 1834, Governor Figueroa formed a partnership to operate the rancho with two other men, Nicolas Gutierrez and Robert Prado. This business arrangement lasted only fifteen months, however, and upon Figueroa's death in 1835 his brother and heir Francisco took over as administrator of the estate and manager of Los Alamitos. He continued in this role for seven years until a new owner arrived to begin a fresh era in the rancho's history (Cleland 1941:190-193).

THE STEARNS PERIOD

Abel Stearns, an American born in Lunenburg, Massachusetts, on February 9, 1798, epitomized the rags-to-riches saga that has long been an important part of American folklore. At the age of twelve Stearns was left destitute by the deaths of his father and mother. He became a sailor and gradually rose to the position of supercargo (an officer in charge of the cargo on a merchant ship) in the South American and China trade (Wright 1977:5,6).

Stearns first moved to Mexico in 1827, where he converted to Catholicism and became a naturalized Mexican citizen. He moved to California in 1829, staying for a short time in Monterey before moving to Los Angeles. In 1832 or 1833 Stearns established a retail business in the pueblo, acquiring hides and tallow from the local ranchers which he traded for imported goods carried on the merchant vessels that visited the California coast. These imports, which included a variety of items such as clothing, dishes, cloth, boots, spices, lumber, and hardware, were then sold at his store in the pueblo. In 1834 Stearns expanded his operation, acquiring an abandoned adobe building and a plot of land on San Pedro Bay where he established a warehouse and trade depot which became known as the *Casa de San Pedro* (Wright 1977:29,30,35,46).

In 1833 or 1834 Stearns was involved in surveying the Nietos grant and preparing the *diseno*, or map, dividing the grant among the heirs; in 1835 he surveyed Rancho de Los Coyotes. Stearns was thus familiar with Rancho Los Alamitos and the surrounding region, and when debt forced the sale of the property Stearns entered into negotiations to purchase the rancho. On July 12, 1842, Stearns acquired Los Alamitos for $5,934. The price included the land, 900 cattle, 1,000 sheep, 240 horses, several buildings, and miscellaneous ranch tools and implements (Wright 1977:66,99-101).

The purchase of Los Alamitos was merely the first step in Stearns' acquisition of an enormous land and cattle empire. He acquired his second rancho, Los Vallecitos in Baja California, in 1846, ostensibly because the lack of winter rains made it impossible to maintain stock on Los Alamitos. The same year he added to his holdings a second rancho in Baja California, the Valle de San Rafael (Wright 1977:101-103). Other ranchos that eventually became part of the Stearns holdings included La Laguna, Las Bolsas, La Bolsa Chica, Los Coyotes, Jurupa, La Habra, and Cajon de Santa Ana; Stearns also had partial holdings in ranchos Temescal and Santiago de Santa Ana (Cleland 1941:196,197,202).

The significance of the Stearns period to the present study lies in the extensive body of data that survives from those years. Perhaps because of his business background, Stearns maintained detailed written payroll and accounting records for the Los Alamitos operations, and these provide a unique opportunity to study the social organization and labor practices of the rancho. Correspondence addressed to Stearns by his ranch managers offers additional descriptive data on rancho life in southern California during the 1850s and 1860s. These documents, archived at the Huntington Library in San Marino, will be referenced at length in the following sections.

The Physical Setting of Rancho Los Alamitos

Rancho Land Holdings

Less than a year after he purchased Los Alamitos, Stearns added the rancho of Los Vallecitos in Baja California to his holdings. During the following decades, as noted above, he continued to acquire ranchos, mostly in the southern California area. While investment was one of the motivating factors in these purchases, another was the California climate. One of the reasons given by Stearns for his

acquisition of Los Vallecitos was that the scarcity of winter rains had made it impossible to maintain his stock at Los Alamitos (Wright 1977:101,102).

The picture that emerges from the Stearns papers is one of vast land holdings which were operated, to some degree, as one large ranch. The traditional names with which historians are most familiar (i.e., Los Coyotes, Los Alamitos, Las Bolsas, etc.) are interspersed with the names of smaller "*ranchitos*" which represent topographical or geographical regions within the larger grants offering specific advantages for the management of stock. Some of these include "Piojo," "Paredes," "Portrero," "Sanja," and "Aguaje" (Charles Forbes to Charles Johnson, August 15, 1862; Oliver Stearns to Abel Stearns, December 10, 1857; Stearns MS).

The general locations of some of these ranchitos can be identified. According to J.P. Harrington "Piojo" was "about 3 miles south-southwest of Los Alamitos ranch house" and was "the old Anaheim Landing... which before the German colony of Anaheim... was established, was known as El Piojo, meaning the louse" (Harrington 1933:150). Paredes was apparently contiguous with Rancho Las Bolsas and may have been located in the vicinity of the present city of Costa Mesa. A letter from *mayordomo* Charles Forbes to Abel Stearns dated September 3, 1862, remarks that "we have removed all the poor cattle from the Alamitos to the Paredes where they are kept on the 'Mesa'" (Stearns MS). When Stearns' land holdings went up for sale in 1868 they included a 33,509 acre tract referred to as "Las Bolsas y Paredes" (Cleland 1941:203). Payroll records from Alamitos and Paredes were often combined in the same report, further evidence of a close operational relationship between the two ranchos.

Portrero was situated on Las Bolsas. The above-mentioned letter from Forbes to Stearns describes how the *majordomo* constructed a secure pasture after "taking into consideration the value of the 'Bolsa Grande' as a big 'Portrero,' for the purpose of breeding fine cattle, and having a secure place for gentle horses."

> I concluded to run a Ballado [ditch or channel] from sienega to sienega [marsh to marsh], five feet wide, by five feet deep and have a live willow fence on the inside, and a good gate with a lock and key.... That Mr. Stearns will be the best Rancho that you have -- I have the mules in there, and the American Bulls, with the gentle cattle [Stearns MS, comments in brackets by W.Mc.].

The locations of "Sanja" and "Aguaje" are uncertain at present.

Housing and Other Structures

As noted above, the first non-Gabrielino structures erected on *Povuu'nga*-Alamitos Mesa may have been constructed by Juan Jose Nieto in 1806, as tradition has held, or later during the Figueroa period of ownership. Fortunately, the situation is clearer for the Stearns period. An inventory was prepared on September 3, 1842, at the time Abel Stearns purchased Los Alamitos, and it includes a brief description of the ranch buildings. Included in the sale were

> one house of adobe with two apartments covered with pitch and others without roof with two opposite doors. One more house of adobe with three apartments covered by rushes and with one door placed therein. One other house of Adobe with two apartments covered by rushes and with one door [Land Commission Case 404, quoted in Cleland 1941:192,193].

Originally these buildings appear to have been utilitarian in nature, serving merely as shelter for the vaqueros and laborers working at Los Alamitos. Following his purchase of the rancho, Stearns

probably renovated one of these structures, expanding it to serve as a headquarters building and summer home for his wife Arcadia. The renovations are believed to have included a gabled, shingled roof and wooden floors (Young et al. 1989:107).

Stearns is also thought to have added a lengthy wing to the building sometime around 1845, presumably to serve as housing for the vaqueros and laborers at the rancho. The addition was divided into nine bays with one window and one door in each bay (Young et al. 1989:106,107). According to a letter written by Charles Forbes on February 22, 1863, the main house with the new wooden wing was known as "*la casa de madera* [the house of wood]." Another building described as "de abajo [down below]" *la casa de madera* was known as "*la casa vieja* [the old house]" (Stearns MS, comments in brackets by W.Mc.).

A number of historical documents bear on the evolution of housing at Los Alamitos. Federal census records for 1850 list 38 individuals (including five nuclear families) dwelling in five separate structures at the rancho (Newmark and Newmark 1929:80). In contrast, with few exceptions the records from the 1860 census list only ranch employees (33 total) housed in two separate buildings on *Povuu'nga*-Alamitos Mesa (see Appendices 2 and 3 for a comparison of these census data with contemporary rancho payroll records). These data suggest that the wooden wing may not have been completed by 1850 or, if complete, may not have been used as a dwelling; by 1860, however, the wing was in use as a bunkhouse. Correspondence in the Stearns papers corroborates the suggestion that the wing (or a portion of it) was used as a storage area. In a letter to Stearns dated July 25, 1852, mayordomo Charles H. Brinley complains that

> It is absolutely necessary that all the wool should be moved and examined -- it has laid so long in a compact mass, that there is danger of its rotting at the bottom. If you would only sell the hides that are stored in the long room on the hill, a proper place would be left for a more important article [Stearns MS].

In a letter dated February 22, 1863, Charles Forbes wrote "necesitaba la casa de madera para poner cueros, manteca y carne [I needed the *casa de madera* to store leather, lard and meat --W.Mc.]" (Stearns MS).

Other housing improvements are also mentioned in correspondence from the Stearns papers. Another Brinley letter, dated November 13, 1852, of the same year, indicates that wooden floors had not yet been added to the house. In this letter Brinley explains that "with the two Indians, Lucas and the other" he had "taken up and relaid all the tiles in the room used for storing corn."

> The earth in this room was a perfect honeycomb and it took me all one day to pick it over and harden it down -- the crowbar going down in some places more than a yard. After getting it to a level, and hard, I put on about five inches of sand over the whole, laid the tiles in that, and on top put about 10 bushels of sand to sift down into the crevices.

Brinley goes on to say that he would "like to do the same with every room in the house," but he was

> afraid to loosen the earth so near the walls. The squirrels and skunks have had a long holiday in these premises. I think the storing of corn here a bad plan -- all such articles should be put in a house apart, the way farmers do at home [Stearns MS].

Although a gabled, shingled roof may have been added to the house during the Stearns ownership, "brea," or tar, was still extensively used as a roofing material. The mayordomo of Los Alamitos in 1862, Charles H. Forbes, wrote

> I send "Miguel" in for the "Brea," he cannot bring more than fifteen hundred pounds for reason that the road is very heavy, and I am afraid that the old waggon will break down -- about twenty-five hundred pounds will do, or, perhaps it would be better to send thirty hundred [Charles Forbes to Charles Johnson, February 6, 1852; Stearns MS].

Plastering the walls of the house was another necessary chore. On December 13, 1858, Oliver Stearns wrote to his uncle Abel that "the plasterer has finished the plastering in the house. The plasterer has worked six days" (Stearns MS).

As noted above, the census documents of 1850 indicate that five separate structures were being used as dwellings in 1850. The additional structures could have been built from adobe or wood; it is also possible that some were *jacales* made from tules. Such houses were often occupied by Indian laborers at the ranchos of southern California.

The appearance and construction of the jacales is suggested by a description of an Indian village near the Sunny Slope Vineyard in Pasadena (Figure 4.1). The Rancheria was "a plot of ground about five acres in extent" and the

> small huts were made of tule (bulrush), which grew in the swamp near by. The tule was stood upright six inches in thickness for the sides of the house, held in place by thin willow rods within and without, fastened together by pieces of raw cowhide. The roofs were of the same material and construction. Mother earth was the floor [Rose 1959:55].

The jacales were described as being waterproof, warm, and comfortable. A lean-to windbreak served as an open air kitchen, and cooking was accomplished with "a number of flat stones conveniently placed about the fire to support the cooking utensils" (Rose 1959:55).

There is documentary evidence for such jacales at Los Alamitos. In a letter dated February 22, 1863, mayordomo Charles Forbes tells of the outbreak of smallpox at Los Alamitos and writes:

> Francisco Chapo que tenia en la cocina, y Miguel luego se enferman y me vi obligado a echar a Miguel fuera de la casa, cerrar todas las puertas e me a vivir a un jacal de tule... [Francisco Chapo had the kitchen, and Miguel soon became ill himself, and I was obliged to throw Miguel out of the house, lock all of the doors, and live myself in a *jacal* of tule . . .] [Stearns MS].

Other ranch buildings at Los Alamitos receive little mention in the Stearns Collection. There are several requests for poles with which to construct fences or pens. Stables or barns of wood or adobe existed, however, as mayordomo Charles Forbes wrote on October 23, 1863, that "Miguel . . . goes now for lumber for flooring the Stable, and making a harness room" (Stearns MS). Another important improvement was proudly announced by mayordomo Charles Brinley in a letter of November 13, 1852.

> I have built a permanent bridge over the creek leading to the coral and, shall put on about three feet of earth on the road, with another foot of said on top, so if it rains hard the creek can't overflow, nor will it be muddy. Once finished, a cart full of dirt now and then will keep it in order [Stearns MS].

Figure 4.1. Indian jacales (brush houses) at Sunny Slope Vineyard near San Gabriel, perhaps photographed during the 1850s or 1860s (courtesy of the Sunny Slope Water Company).

The Rancho Economy

Barter, Labor and Seigneurialism in the Rancho System

The rancho economies during the Nieto-Figueroa and Stearns periods were governed by the principles of barter and a feudal-like socio-economic system known as seigneurialism. Wealth and social status during the Rancho period was based upon the ownership of land; those who did not own land labored for the landowners. Although in some respects this system (which is known as seigneurialism) resembled that of the American South prior to the Civil War, there were important differences. Indians were not chattel bound by law, they were not (generally speaking) sold, and they were free to leave the ranchos (see Monroy 1990:100-102). As will be noted below, however, other factors restricted the Indian's physical and economic mobility.

Many of the Indians who did not join the missions sought work at the Pueblo and on the ranchos, where they became the primary labor pool; following the secularization of the mission system in the 1830s they were joined by many former mission Indians. Documents from Los Alamitos during the Stearns period classify the laborers into the various categories of employment. The size of the workforce at Los Alamitos depended upon the time of year; typically the rancho appears to have employed 15 to 20 workers. In summarizing the payroll accounts for June 30, 1861, Charles Forbes wrote "Hay dies Vaqueros en Alamitos, tres Peones, el Huertero, Cocinero, Tortillera, y lavandera, yo, y Mi hermano Miguel... [There are ten vaqueros at Alamitos, three laborers, the gardener, cook, tortilla maker, laundress, myself, and my brother Miguel -- W.Mc.]." Shepherds are also specifically noted in the records from the 1850s (Stearns MS).

Wages at Los Alamitos depended upon the individual's qualifications. A *peon* might receive $10 to $15 per month, while a *vaquero* might make $12 to $20 per month. Payment was in goods, with each employee obtaining the items he needed from the stock maintained at the ranch (Stearns MS). An inventory of the items in store at Alamitos on January 1, 1858, includes blue blankets; pants; woolen shirts; undershirts; calico shirts; shoes; rebosas [scarfs]; cotton handkerchiefs; vests; flannel, calico, and cotton yardage; combs; thimbles; buttons; hooks and eyes; table spoons; ribbon; woolen stockings; matches; tobacco; coffee; spurs; and other utilitarian items. Medicine and doctor's bills were charged to the rancho and deducted from the employee's account. Accounts were reconciled on a monthly basis; when the employee left the ranch he was paid the balance due, if any, in cash (Stearns MS).

Although Indians were theoretically free to choose their employment, in fact other forces often determined their fate. An April 1850 act of the California legislature provided that "any white person" could, with the consent of the Justice of the Peace, post bail for an Indian convicted of an offense punishable by fine. The Indian would then be obliged to labor for the person posting bail until the debt was paid. The same act also provided that any able-bodied Indian who was found "loitering and strolling about, or frequenting public places where liquors are sold, begging or living an immoral or profligate course of life," could be arrested and hired out to the highest bidder for a term of labor not to exceed four months (see Monroy 1990:185,186; also Phillips 1980).

The *ayuntamiento*, or town council, of Los Angeles passed a similar act on August 16, 1850, providing that when the city lacked work for the chain gang, prisoners would be auctioned to the highest bidder "for a sum which shall not be less than the amount of their fine for double the time which they were to serve at hard labor" (quoted in Cleland 1941:299, note 19, see also p. 58). Those imprisoned included Indians who had been working in the vineyards and had been paid part of their wages in *aguardiente* (raw brandy) (Robinson 1852:2,3). As one early writer explained

> The cultivators of vineyards commenced paying their Indian peons with *aguardiente*, a veritable fire-water and no mistake. The consequence was that on being paid off on Saturday evening, they would meet in great gatherings called peons, and pass the night in gambling, drunkenness and debauchery...
>
> By four o'clock on Sunday afternoon Los Angeles street from Commercial to *Nigger Alley*, Aliso street from Los Angeles to Alameda, and *Nigger Alley*, would be crowded with a mass of drunken Indians...
>
> About sundown the pompous marshall... would drive and drag the herd to a big corral in the rear of Downey Block... and in the morning they would be exposed for sale... They would be sold for a week, and bought up by the vineyard men and others at prices ranging from one to three dollars, one-third of which... would invariably be paid in *aguardiente* [Bell 1927:35,36].

Evidence from the Stearns papers suggests that the mayordomo of Los Alamitos was more than willing to take advantage of these opportunistic legal measures. On August 30, 1852, Brinley wrote to Stearns "I wish you would deputize some one to attend the auction that usually takes place at the prison on Mondays, and buy me five or six indians" (Stearns MS). In a letter written a few months later on December 11 Brinley noted that "Fernando passed here the other day, and is now in town at Alexanders." The mayordomo requested that "perhaps if you talk with him, he may come back -- if you can catch him in jail tomorrow, and send him here, we can probably keep him" (Stearns MS).

Other sources of labor for the rancho included the missions and neighboring ranchos. Payroll records for April, 1858, include "Jose Antonio Niofito" and "Juan Bautista Niofito"; the term "*niofito*," or neophyte, referred to a mission Indian. Earlier records for April, 1843, list "Antonio Gabrileno" and "Jose San Juaneno," presumably referring to Indians obtained from missions San Gabriel and San Juan Capistrano. On November 6, 1852, mayordomo Brinley reported that he sent "Soto to the old mission this afternoon to find people -- some six or eight." Workers were also obtained from the other ranchos, as Brinley reported a few days later on November 13. "Soto succeeded in procuring two men at the Nieto, who will be here tomorrow -- I have also an indian here, who formerly worked at Temples" (Stearns MS).

Production and Trade at Rancho Los Alamitos

Economic production at Rancho Los Alamitos was based primarily upon cattle and sheep ranching and the byproducts of these activities. In the early 1850s Stearns' title to Los Alamitos was challenged by several of Figueroa's heirs. A settlement agreement negotiated between Stearns and Pedro Arriaga dated March 3, 1859, detailed the stock included in the original purchase. According to the agreement Stearns acquired 39 mares with colts, 45 mares without colts, 8 tame horses without blemish, 12 tame horses with some blemish, 23 gelding colts, 14 uncut, half-broken colts, 23 horses partly serviceable, 4 unbroken colts, 1 jackass, 13 mules, 58 large hogs, 30 small hogs, 12 pigs, 61 cows, 231 rodeo cows, 14 oxen, 3 cabuestas, 129 heifers, 310 calves, 134 steers, 12 bulls, 672 rams and ewes, 217 wethers, and 240 lambs (Stearns MS; see also Cleland 1941:195).

During the Stearns period the value of horses and cattle increased dramatically in response to economic developments in California. Prior to 1848 cattle were commercially valuable primarily for their hides and tallow; the price of a full-grown steer averaged about $4 per head. This changed with the huge influx of American immigrants during the Gold Rush, however, and cattle prices soared to $30 and $40 per head. Later, sheep ranching became especially profitable when the outbreak of the Civil War created a large demand for wool (Cleland 1941:102,103,106,141).

Ranching involved a seasonal round of rodeos, *recogidas* (horse roundups), and *matanzas* (slaughters). Abel Stearns provided a description of a rodeo to the Land Commission, explaining that

> The cattle of different owners necessarily get mixed together as there are no fences and it is the custom at certain seasons for the owners of the Ranchos to drive their cattle together within their own limits for the purpose of separating their own cattle from those of their neighbors...
>
> When a Rodeo is ordered the servants are sent out in the borders of the Rancho and the cattle are driven in to the place established for the Rodeo, and no owner of a Rancho has a right to go over the line of his Rancho to drive in the Cattle except by special permission of the neighboring land owner [Stearns quoted in Cleland 1941:55].

An 1851 act passed by the state legislature entitled *Laws Concerning Rodeos, and Defining the Duties of Judges of the Plains* required landowners to hold at least one general rodeo each year, giving neighboring rancheros at least four days' notice of the time and place (Cleland 1941:53,54). The correspondence from the Stearns papers indicates that rodeos were held at the various ranchos sometime between spring and late summer. Thus, on June 23, 1859, mayordomo Charles Forbes wrote that "Yesterday, a Rodeo was given at the Sanja and the cattle taken to the Paredes. . . ." On July 7 Forbes wrote "... at the Paredes... the vaqueros... have been giving Rodeos" (Stearns MS). In 1861 the rodeo at the Paredes was held on August 12, while in 1862 the rodeos at Palo, Piojo, Aguaje, and Sanja were held in August. In 1863 the rodeos at Alamitos and Paredes were given in April, and those of "Sanja de la Media and the Palo" were given in May (Charles Forbes to Abel Stearns, August 11, 1861; August 15, 1862; April 19, 1863; and May 12, 1863; Stearns MS).

Recogidas, or roundups of horses, appear to have been held in late summer. On August 12, 1862, Charles Forbes wrote from Los Alamitos that "we are having a 'recogida' of 'caballada' here" (Stearns MS). An early account of Los Angeles describes how "rancheros constructed large pens (corrals), with outspreading wings of long extent from the doorway, into which the wild horses were driven" (Warner et al. 1876:17). Matanzas, or slaughters, were held during the summer, and several letters written by Charles Forbes in July, 1861, indicate that the matanza was held at San Pedro (Stearns MS).

Cattle drives were also part of the seasonal round at Los Alamitos and other southern California ranchos, especially during the cattle boom of the late 1840s and early 1850s. Herds were driven north either along the coast or through the San Joaquin Valley. The cattle had to live off the land, so drives usually started north shortly after the winter rains brought the grasses to maturity. A drive typically lasted a month (Cleland 1941:103,104). Oliver Stearns describes such a drive held during 1862 in correspondence written to his uncle Abel. The herd reached Santa Barbara on May 14th, San Luis Obispo on May 22nd, and arrived at their destination of Watsonville, near Monterey, on June 2, 1862 (Stearns MS).

Other economic pursuits at Los Alamitos included agriculture and soap-making. Agriculture was pursued on a limited basis, probably in large part to supply the needs of the rancho. Hay and clover hay were grown for fodder; also cultivated were "calabazas" (pumpkins or gourds), lettuce, onions, cabbage, and watermelons (Charles Forbes to Abel Stearns, July 13, 1859, and June 21, 1862; Charles Forbes to Charles Johnson, March 16, 1863; Stearns MS). In a letter dated February 12, 1862, Charles Forbes described raising barley, potatoes, and corn at Piojo; another letter from Oliver Stearns dated June 23, 1857, discusses a proposal for sharecropping in corn, beans, and barley at Rancho Paredes (Stearns MS).

Soapmaking appears to have been a common economic pursuit on the larger ranchos, where a portion of the tallow obtained during the *matanza* was converted to soap. An account from Rancho Chino, near the present city of Pomona, described the process, which used

> a boiler about ten feet deep and the same in diameter, and the upper part made of wood. This was filled with tallow and the fattest of the meat. A little water was also poured into it and then the whole was tried out, after which the grease was dipped into a box about ten or twelve feet square. The meat was then thrown away. Mineral earth was then leached liked ashes, the lye obtained from it put with the grease and boiled into soap [Beattie et al. quoted in Cleland 1941:64].

Documentation for soap-making at Los Alamitos is found in a letter mayordomo Brinley wrote to Stearns on August 30, 1852, in which he vows to "keep the soap operator, if it costs me $30 per month -- if he can't be induced to remain, I shall keep him until he teaches me the secret." In 1862 Charles Forbes wrote "I had already prepared, and killed, some fifteen Bullocks, put the manteca in tin cans, and the tallow tried out, and put into the big vat for soap" (Charles Forbes to Abel Stearns, September 30, 1862; Stearns MS).

Ranch Management

Management of Rancho Los Alamitos was entrusted to a mayordomo who supervised the work and maintained the accounts of the employees and inventory of the stores. Based on the dates of the correspondence and payroll records found in the Stearns papers, the mayordomos at Los Alamitos for the years 1852 to 1864 were:

Antonio Avila	?
Charles Brinley	1852-1853
Eugenio Bonnet	1854-1855
Oliver Stearns	1856-1857
Miguel Castaneda	1858
Charles Forbes	1859-1864 (1866?)

Under the mayordomo was the corporal, and beneath him the laborers and vaqueros. At Los Alamitos there was also a mayordomo del campo, or field supervisor, who was responsible for managing work at the ranchitos and pastures.

In addition to the mayordomo at each rancho, Abel Stearns employed a *mayordomo general* to oversee and coordinate the activities at all of the Stearns holdings. During the 1850s Don Francisco Rodriguez occupied this position (Stearns MS).

The interaction between mayordomo and employee, as well as between Stearns and his mayordomos, was not always genial. On September 5, 1852, Charles Brinley wrote to Stearns that "all the indians save Soila & Pascual have left and I trust that God will take a liking to them -- the same state of things exists in other ranches about here." The cause of the departure is unclear; however, on September 9th Brinley wrote

> I despatched the vaqueros to San Joaquin -- but there being no people in that ranch, they had to return... I should have sent them to Bernardo Yorba's but his people have gone to San Juan, and in fact, what with feasts and watermelons, it is not such an easy matter to get anything done, about this time.

Whatever the cause of the situation, it is apparent from Brinley's letters that Stearns held him responsible for the disruption of work at the rancho. In his letter of September 9 Brinley reacted bitterly, complaining that he had

never from the commencement of Francisco's reign here, interfered with the servants in any way, manner, or shape, and if any blame attaches to me, it is that of having given them too much beef, and treating them too well. Wherever they have gone, I trust the Lord will take a liking to them, and keep some healthy disease among them.

Two months later, in a letter dated November 6 Brinley offered his resignation, stating that "if you are of opinion that your interests will suffer in my hands, pray let me know it at once, and as soon as you can make a more agreeable change, I will retire" (Stearns MS). Stearns and Brinley were apparently unable to reconcile their differences; by 1854 Eugenio Bonnet had replaced Brinley as mayordomo of Los Alamitos.

Population and Residence Patterns at Rancho Los Alamitos

The residence patterns at Los Alamitos can be inferred from the payroll records, census data, and occasional scraps of information contained in the correspondence. These data depict an occupation pattern that evolved as the ranch expanded and the labor needs changed.

As noted above, the census data taken in 1850 indicates that the rancho employees and their families were dwelling in five separate structures at Los Alamitos. The order in which the names were recorded in the census suggests that there were five separate nuclear families, four of them with children: Vicente Soltero and Maria Antonia (no children); Jose Zoila and Lionicia (4 children); Juan de Mapa and Materna (1 child); Paulino and Maliriana (7 children); and Fernando and Carlota (2 children). It is not clear from the data whether any of the other fourteen individuals named in the census were related to these families (see Newmark and Newmark 1929:80).

A document in the Stearns papers titled "Lista de Sirvientes en Alamitos," which appears to date to the 1840s or early 1850s, provides additional population data (comments in brackets by W.Mc.):

Antonio Abila, Mayordomo

Juan Martin, Mayordomo del Campo, mujer y dos hijos [wife and two sons]

Luis Valensuela, Su Esposa, Josefa Rocha, siete hijos y 2 hijas [his wife, Josefa Rocha, seven sons and two daughters]

Francisco Jabonero [soapmaker], mujer, 2 hijos y dos hijas [wife, two sons and two daughters]

Paublino, mujer y 3 hijos 1 mujer [wife, three sons and one wife]

Fernando, mujer, 1 [hijo] 2 [hijas] [wife, one son and two daughters]

Pacifico, Albanil

Rafael, y mujer, 1 hijo [wife and one son]

Domingo, y mujer, 1 hijo y 1 hija [wife, one son, and one daughter]

Alejo, viudo, 1 hija [widower, one son]

Bernal, mujer, y 1 hijo [wife and one son]

Tomas, y mujer, y 1 hijo [wife and one son]

Martin

Matheson, Francis

Eustaquio, mujer, y su suegra y hermano [wife, and mother-in-law, and brother]

Marios -- y mujer - lavandera [wife, laundress]

Mariano

Regaldo Pedro

Census data compiled in July, 1860, presents a very different picture of the occupation pattern at Los Alamitos. A comparison of this census with payroll records prepared in June of the same year permits identification of the entries related to Los Alamitos (see Appendix 3). Page 186 of the San Pedro Township schedule lists thirty-three individuals living in two separate dwellings. Twenty- six of these are identified as ranch employees (i.e., laborers, vaqueros, or servants); only one family is recorded, and it includes the cook Paulino, two women (most likely his wife and daughter-in-law). and three of his children (Federal Census of 1860). The fact that Paulino had his family living with him was a source of annoyance to mayordomo Charles Brinley. On October 11, 1859, he wrote to Abel Stearns complaining that

> There are here a lot of women, children, and men (I believe, Paulino's crowd) that are eating here. Juan gave them a cart to go for their traps, and also, Guadalupe's house to live in, I do not know what to do with them, for if Juan takes it upon himself, to lend them a cart, and a house to live in, without asking me about it, I suppose that he has a right to do so [Stearns MS].

Two months later, on December 19th, Forbes was still complaining. "Paulino is here cooking and wants rations for his two daughters and rest of children" he wrote, "please write to Juan about sending them away" (Stearns MS).

These data suggest that by 1860 living accommodations for the mayordomo and the labor force were centralized in two buildings located on the mesa, perhaps the main house with the attached wooden wing and another nearby structure. Family members were required to live elsewhere, perhaps at a nearby village.

Another second set of entries related to Rancho Los Alamitos appears on page 167 of the Santa Ana Township schedule for the Federal Census of 1860; here, however, the family members were not separated. Twenty individuals are identified as living in two separate dwellings; these include what appears to be three married couples, one with four children. The fact that these entries are listed on the Santa Ana schedule suggests that this is one of the outlying ranchitos operated in conjunction with Los Alamitos.

The Indian Population at Rancho Los Alamitos

The labor force at the ranchos typically represented a mixed population of Indians and Mexicans. L.J. Rose, whose description of the village at Sunny Slope Vineyards in Pasadena was quoted above, commented on the intermingling of the Mexican and Indian populations in the 1860s, noting that

> In speaking of Mexicans and Indians the distinction is with practically no difference in appearance or temperament. The Indians had much coarser hair, which was never wavy. Their complexions were invariably dark and cheekbones more prominent than those of the Mexicans, whereas some of the Mexicans were fair, occasionally having blue eyes and curly, auburn hair. Their modes of living were the same. They fraternized readily and frequently intermarried...
>
> Their marriages were of the common-law order, but they were very true to their mates... [Rose 1959:54].

According to the Federal Census of 1850, thirty-three of the thirty-eight occupants of Rancho Los Alamitos were California Indians (Newmark and Newmark 1929:80). The Federal Census of 1860 records eighteen of the thirty-three rancho occupants as California Indians; a second set of entries for one of the outlying ranchos identifies five of the twenty employees as California Indians (Federal Census of 1860, San Pedro Township:186, Santa Ana Township:167).

Neither the federal census records nor the rancho payroll records identify the language spoken by the Indians in the rancho labor force; however, other data suggest that the Gabrielino and Juaneno were a minority. In 1852 Hugo Reid reported that "most of the Indians remaining in the county are from other parts -- from Santa Ynez to San Diego. A few [Gabrielino --W.Mc.] are to be found at San Fernando, San Gabriel and the Angeles. Those in service on the ranchos are a mere handful" (Reid 1968:100). A survey completed in 1844 listed 600 Indians living in the Pueblo of Los Angeles, of which 400 were non-Gabrielino from the southern missions (Census of 1844, III, 602-626, quoted in Phillips 1980).

However, some Gabrielino and Juaneno Indians were employed at the rancho. J.P. Harrington reported of his Juaneno consultant Jose de la Gracia Cruz that "Acu [Jose's nickname --W.Mc.] and other old informants had sheared sheep at Los Alamitos ranch house. . . . Acu remembered Mr. Abel Stearns as Don Abel Esterns, and his wife, Mrs. Arcadia Bandini Stearns as Dona Alcaria Bandinez" (Harrington 1933:149).

The name Jose de la Cruz appears on a number of rancho payroll reports (for example, see accounting records for June, 1860, June 30, 1861, and December, 1861; Stearns MS), as well as on the Federal Census of 1860. However, there are problems in identifying this individual with Harrington's consultant.

First, the 1860 Census does not identify Jose de la Cruz as a California Indian. Second, the census gives Jose's age as 22 years. However, according to Father John O'Sullivan, in 1910 (when the priest first arrived at San Juan Capistrano) Jose gave his age as 62. If Jose's memory was correct he would have been only 12 years of age when the census was taken in 1860 (see Saunders and O'Sullivan 1930:vi,51). Thus the identification of Jose de la Cruz as the individual on the census and payroll records must remain in question.

Harrington also remarked that another Juaneno consultant "old Eustaquio . . . used to shear there" (Harrington 1933:149). An individual named Eustaquio appears on a "Lista de Sirvientes en Alamitos" included in the 1850-1854 packet of documents in the Stearns papers.

Harrington reported that he "visited Puvu' village site and spring with Kewen," referring to his Gabrielino consultant Jose de los Santos Juncos (Harrington 1933:148). Harrington does not discuss whether Kewen worked at the ranch. Although the name Jose appears quite commonly in the payroll records, the author was unable to locate any accounts under the names Santos Juncos or Kewen.

Daily Life at Rancho Los Alamitos

A number of historical accounts provide general descriptions of life on the California ranchos (see Robinson 1846; Cleland 1941:51-74). In contrast, the Stearns papers provide fleeting, fragmentary glimpses of specific aspects of daily life at Los Alamitos.

The daily diet of the Indian laborers on the ranchos was simple, as described by L.J. Rose of the laborers at Sunny Slope Vineyards:

> Great coffee drinkers, meat and bean eaters, these were their thrice-a-day fare. Their sun-dried meat was roasted over the embers, their beans, the small rose- colored variety, fried with their own juice, after boiling, with a small quantity of lard added. Few had chickens or took the trouble to have a garden; as a consequence eggs and vegetables were rarely indulged in.

Tortillas were a staple and were

> made from a dough of ground corn and water and a little salt... This was toasted on a large piece of sheet iron, placed on the rocks over the coals... A piece of meat, some stew or *frijoles* (beans) was wrapped in it and eaten as a sandwich.

Rose concluded that "these people were scrupulously careful in the preparation of their food" (Rose 1959:55).

The correspondence from Los Alamitos indicates that produce grown in the garden was a more important part of the diet than the above account indicates. Corn, potatoes, onions, lettuce, cabbage, *calabazas* (pumpkins or gourds), watermelon, and beans were all grown at the rancho. Supply orders and ranch inventories also testify to the popularity of tobacco.

Medical treatment was primitive. A letter written by Oliver Stearns on December 10, 1857, describes using "yellow dock & sasparilla" to treat the wife of Guadalupe Ruiz. Serious illness required a trip to the Pueblo for treatment.

Life at Los Alamitos was hard and often lonely, although horse races and fiestas provided entertainment to break the tedium. A letter from Charles Brinley dated September 9, 1852, reported that "On Monday I despatched the vaqueros to San Joaquin... I should have sent them to Bernardo Yorba's but his people have gone to San Juan... what with feasts and watermelons it is not such an easy matter to get anything done..." And of course, there were always the temptations of the Pueblo.

Sometimes, however, a plaintive note of isolation and sadness surfaces in the correspondence, as in a letter from mayordomo Brinley to Abel Stearns written on Christmas Day, 1852.

> I wish you a Merry Christmas more so than I am likely to pass. Also kind remembrances of the day to your family.
>
> Last Monday I started for town but the [illegible -- W.Mc.] stopped me, since then it has rained almost without cessation and yesterday morning, the plain was one great pond -- the creeks are now falling, but still almost impassable.
>
> Nothing of consequence occurred here [Stearns MS].

Gabrielino Religion During the Stearns Period

Unfortunately, the material in the Stearns Collection offers no new information on Gabrielino religious beliefs or practices during the Rancho period. The author was unable to locate any references to ritual practices or activities in the correspondence between Stearns and his mayordomos.

Although this lack of information is disappointing, it is not surprising. There are enormous chronological gaps in the Stearns correspondence spanning many years. In fact, the Rancho Los Alamitos papers are comparable to a family photograph album in which most of the pictures have been removed, leaving only a few snapshots remaining on some of the pages. Furthermore, Stearns and his associates were primarily concerned with business matters, such as the day-to-day affairs of running a rancho in southern California.

According to Hugo Reid, at least some elements of Gabrielino religion were still practiced as late as 1852. Reid noted that "no standing Church [*yovaar* --W.Mc.] . . . remains nowadays; it is made yearly and consecrated when required, on any spot they choose to select." He also reported that "women undergo the same purification after childbirth as formerly, with the exception of such as were in the service of whites at their first parturition" (Reid 1852:102,103).

The Gabrielino and other Indians working at Los Alamitos may have continued some of these practices; they could also have attended rituals hosted by Luiseno communities to the south. Jose de la Cruz, Jose de los Santos Juncos, Eustaquio, and perhaps other Indians working at the rancho knew the history and significance of *Povuu'nga*. They may have continued to revere the site, but there is no evidence that public rituals were conducted there.

The End of the Stearns Era

The decade of the 1860s saw a dramatic decline in the fortunes of Abel Stearns and many other southern California rancheros. A series of natural disasters, coupled with a serious downturn in the local economy, brought an end to the period commonly known as the California Pastoral. The impact of these events on the Indian community at Los Alamitos can only be suggested from the available data.

The boom in the cattle industry, brought about by increased demand for beef during the Gold Rush, began to decline as early as 1855. Competition appears to have been the main factor. Large numbers of sheep were imported from the Southwest, especially New Mexico, while cattle were driven into California from the Mississippi and Missouri valleys. By 1856 cattle prices had dropped from a high of $30 to $40 per head during the Gold Rush to $16 or $17 per head. A severe drought in 1857 caused further financial distress and reportedly killed 10,000 cattle in Los Angeles County (Cleland 1941:106,109,110).

Most of the rancheros were heavily in debt, and the decline in the cattle market led to the loss of many ranchos. Outrageously high interest rates ranging from 4% to 8% per month cost many a landowner his property. Stearns profited from these financial difficulties by acquiring property through foreclosure, and by 1862 he owned over 200,000 acres of land. However, he soon found his financial empire was soon in jeopardy.

During November and December, 1861, and January, 1862, a series of rainstorms dumped almost 40 inches of rain on the California countryside. The Pueblo of Los Angeles was flooded waist-deep with water, Anaheim was submerged beneath a lake 3 feet deep. The community of Agua Mansa,

located on the Santa Ana River between Riverside and Colton, was completely destroyed (Brewer 1930:241-253; Cleland 1941:127-130). The great flood was then followed by two years of drought which devastated the cattle industry. The number of cattle in Los Angeles County dropped from 70,000 to 20,000; herds were offered at prices ranging from $1.50 to $2.00 a head, a huge decline from the $30 to $40 a head brought by cattle during the early days of the Gold Rush (Cleland 1941:134,135).

More terrifying than these economic woes, however, was an epidemic of smallpox that erupted in the fall of 1862 and continued through the winter. Deaths in Los Angeles reportedly ran as high as 15 to 20 per day (Cleland 1941:80,81). On February 22, 1863, mayordomo Charles Forbes wrote to Abel Stearns that "Hemos tenido en las Paredes, Bolsas, y Alamitos varios enfermos de las viruelas, en las Paredes murieron algunos nueve, o dies, en los Alamitos dos, pero ya estan todos buenos y andando [We have had various cases of smallpox in the Paredes, Bolsas, and Alamitos, in the Paredes some nine or ten have died, at Los Alamitos two, but the rest are now well and about --W.Mc.]" (Stearns MS).

In the end, however, it was Stearns' financial problems that brought about the loss of Los Alamitos. In 1861 Stearns mortgaged Los Alamitos to Michael Reese of San Francisco for $20,000. Stearns used the funds to complete the construction of his Arcadia block, a two-story, brick business complex containing eight stores that stood at the corner of Arcadia and Los Angeles streets. Stearns defaulted on the note, Reese foreclosed, and in 1866 an era at Los Alamitos came to an end (Cleland 1941:202).

Stearns was able to retain his remaining ranchos, and during the late 1860s immigration and settlement increased, land values rose, and his financial position improved. The ranchos were subdivided into 640-acre tracts, which were then further subdivided into farms ranging in size from 20 to 60 acres. Sales were managed by a syndicate known as the Robinson Trust, organized by Stearn's friend Alfred Robinson, which included Sam Brannan, Edward F. Northam, Charles B. Polhemus, Edward Martin, and Stearns (Cleland 1941:203,204). In a March 7, 1868, letter Charles Forbes tells of traveling with

> Captain Northam and companion also Gent. Rosencrans... I went by the Laguna, and thence across Don Pio Pico's, thence along down by Downey's, on the Alamitos Road to about to where the line of the Alamitos and Coyotes comes thence across the plains towards the Paredes... The country looks beautiful, the grass all over is six inches high or more. I think that Cap. Northam and party are highly pleased, and well satisfied... They will make you an offer [Stearns MS].

Stearns lived only a few years longer, dying on August 23, 1871, during a trip to San Francisco. His wife Arcadia outlived him by more than 40 years; upon her death in 1912 her estate was estimated as high as 15 million dollars (Wright 1977:97).

The Stearns period is arguably the most significant phase in the post-Gabrielino history of *Povuu'nga*-Alamitos Mesa. During these years southern California evolved from a seigneurial society and a pastoral economy to a diversified economy in which agriculture and small family-owned landholdings played a central role. The Stearns period was also the last time that a large population of California Indians resided on *Povuu'nga*-Alamitos Mesa. The smallpox epidemic of 1862-1863 reduced the local Indian population; the collapse of the rancho system further undermined the Indians' economic and social structure.

Finally, the Stearns period is significant because of the documentary evidence which survives in the Stearns Collection at the Huntington Library. The correspondence and payroll records preserved in this collection, coupled with the census data for 1850 and 1860, provide a unique window through which researchers can glimpse life on a California rancho during the Mexican and early American periods.

RANCHO LOS ALAMITOS DURING THE REESE-BIXBY PERIOD

During the years that Los Alamitos was owned by Michael Reese the rancho was leased out, first to Gabriel Allen, who ran several thousand head of horse and cattle on the land, and later to W.S. Lyon, who ran sheep. Apparently the buildings on *Povuu'nga-* Alamitos Mesa went unoccupied and were allowed to deteriorate. In 1878 Lyon subleased a portion of the rancho (1,000 or 2,000 acres) to John W. Bixby; three years later when Lyon's lease expired the rancho was purchased by a partnership of I.W. Hellman (a Los Angeles Banker), Jotham Bixby and Company, and John Bixby (Harrington 1933:149; Smith 1931:59,60).

The Bixby period represents the final transition of Los Alamitos from rancho to modern, urbanized community. Indeed, the Bixby family was instrumental in promoting the development of much of Los Angeles and Orange counties during their ownership. The story of this family, which mirrors many of the events that accompanied the American takeover of California, has been told elsewhere and will be only briefly recounted here.

Llewellyn Bixby came to California in 1851 and, after a short time at the gold diggings, settled in the town of Volcano Diggings near Sutter's Mill. In 1853 he joined his cousins Thomas and Benjamin Flint to form Flint, Bixby and Company, and undertake a venture to bring sheep from Illinois to California. The party arrived in San Bernardino in late 1853 with a herd of approximately 2,000 sheep, then continued north to San Jose. In October of 1855, Flint, Bixby and Company purchased the Rancho San Justo in Monterey County and established it as the headquarters of their operations (Smith 1931:27-39).

In 1866 Flint, Bixby and Company purchased Rancho Los Cerritos, one of the five original Nieto grants, from John Temple. In 1869 a half interest in the rancho was sold to Llewellyn's brother Jotham Bixby, who had followed Llewellyn to California in 1852. Rancho Los Cerritos was managed by Jotham under the name J. Bixby and Company and was devoted primarily to sheep ranching. In 1880 4,000 acres of Rancho Los Cerritos were sold to the American Colony under the leadership of W.E. Willmore for the founding of Willmore City. This land ultimately became the nucleus of Long Beach, the city whose boundaries have since grown to incorporate much of Los Cerritos and Los Alamitos ranchos (Smith 1931:55-60).

Sometime after 1869 Jotham Bixby was joined at Rancho Los Cerritos by his cousin, John W. Bixby. In 1878 John Bixby subleased a portion of Rancho Los Alamitos, which was still owned by Michael Reese, and moved onto the property. As mentioned above, when Los Alamitos came up for sale in 1881 it was purchased by a partnership of I.W. Hellman, J. Bixby and Company, and John Bixby, each owning one third (Smith 1931:55-60).

Rancho Los Alamitos was operated as a sheep and cattle ranch by John Bixby until his death in 1887 at the early age of 39. Los Alamitos was then subdivided into three parts, with John's widow Susan retaining the portion on which the ranch buildings stood (Figure 4.2). In 1898, following his graduation from the University of California, John's son Fred leased Rancho Los Alamitos from his mother. He continued to operate Los Alamitos as a cattle ranch until his death in 1952.

The Rancho Labor Force During the Bixby Period

As noted above, during the Reese period of ownership Rancho Los Alamitos was leased to several individuals who used the land for cattle, horse, and sheep ranching. The present location of records for these years (if they exist) is unknown. A brief review of the payroll records for the early

Figure 4.2. Rancho Los Alamitos circa 1880 (courtesy of the Rancho Los Alamitos Historic Ranch and Gardens, Long Beach, CA).

years of the Bixby period (beginning in 1878) reveals a labor force that, with one or two exceptions, is predominantly non-Indian and non-hispanic. Although one cannot rule out the possibility that Indians were employed at Los Alamitos during the Bixby period, the present data do not allow any such individuals to be identified.

An Enduring Cultural Legacy

By the time of Fred Bixby's death in 1952, most of Rancho Los Alamitos had been subdivided and developed. Land once devoted to cattle ranching is now occupied by California State University, Long Beach, the Veteran's Hospital, the Naval Weapons Station, and several housing subdivisions.

Fred's widow Florence died in 1961, and in 1968 the Bixby trustees donated the ranch buildings and 7.5 acres of land on *Povuu'nga*-Alamitos Mesa to the City of Long Beach (Salzer 1975). Today these buildings remain as testimony to the cultures -- Indian, Spanish, Mexican, and American -- that have occupied the mesa since the time when "the first Indian settlers came here from the north . . . led here by a captain general who they declare lives on an island and to whom they attribute life without beginning or end."

PART 2
THE ARCHAEOLOGY OF CSULB CAMPUS AND THE ALAMITOS BAY REGION

CHAPTER 5

PREVIOUS WORK AT SITES CA-LAN-234 AND CA-LAN-235

Jeffrey H. Altschul

Part 2 of this report ties the ethnohistoric record presented in Part 1 with the extant archaeological record. The part is divided into three chapters, which move geographically and theoretically from the specific to the general. In this chapter, we focus on the history of investigations at one site. In Chapter 7, we expand our scope to the history of research first on the CSULB campus and second on the Alamitos Bay region. Chapter 8 presents a model through which archaeological phenomenon in the region as well as at CA-LAN-234/235 can be explained.

INTRODUCTION

This chapter outlines the history of archaeological investigations at the sites recorded as CA-LAN-234 and CA-LAN-235. We have two objectives in this endeavor. The first is to present the chronology of archaeological work. We want to present the reader with an idea of how much work was accomplished at various times and the interpretations that were based on that work. The second goal is to compile the extant data and present a composite picture of what is known about the sites.

The chapter is organized by investigation, with each investigation described in an individual section. A summary of previous work and a statement of our current knowledge is then provided.

Original Site Recording - 1960

According to Keith Dixon (personal communication, 1994), locals in the Long Beach area had known about a scatter of prehistoric artifacts near the intersection of Bellflower Road and University Drive for years prior to his arrival at the university. With his appointment to the department of anthropology at CSULB in 1958, Dixon was contacted repeatedly by amateur archaeologists and interested locales, who told of artifacts found in the area. In September 1960, Dixon formally completed site records for the scatter. Because University Drive, a paved 4-lane road, bisected the scatter from east to west, Dixon decided to record it as two sites, CA-LAN-234 consisting of the scatter north of University Drive and CA-LAN-235 composed of the scatter south of the road (Figure 5.1). At this time, Dixon described the CA-LAN-234 as "surface shell and some chipping waste" and CA-LAN-235 as "shell and some chipping waste." (Dixon 1960a, 1960b). Surface soil is described as "little darkening" and "adobe, slight darkening", respectively. Site sizes were estimated as "ca. 100 m diameter" for CA-LAN-234 and 30 m east-west by 150 m north-south for CA-LAN-235. Both sites were deemed worthy of further testing. Sketch maps and photographs were not made at this time.

The Discovery of a Human Burial - 1972

On February 12, 1972, workmen for the Acme Sprinkler Company were excavating a trench parallel to Earl Warren Drive as part of installing a sprinkler system. About 100 m south of Anaheim

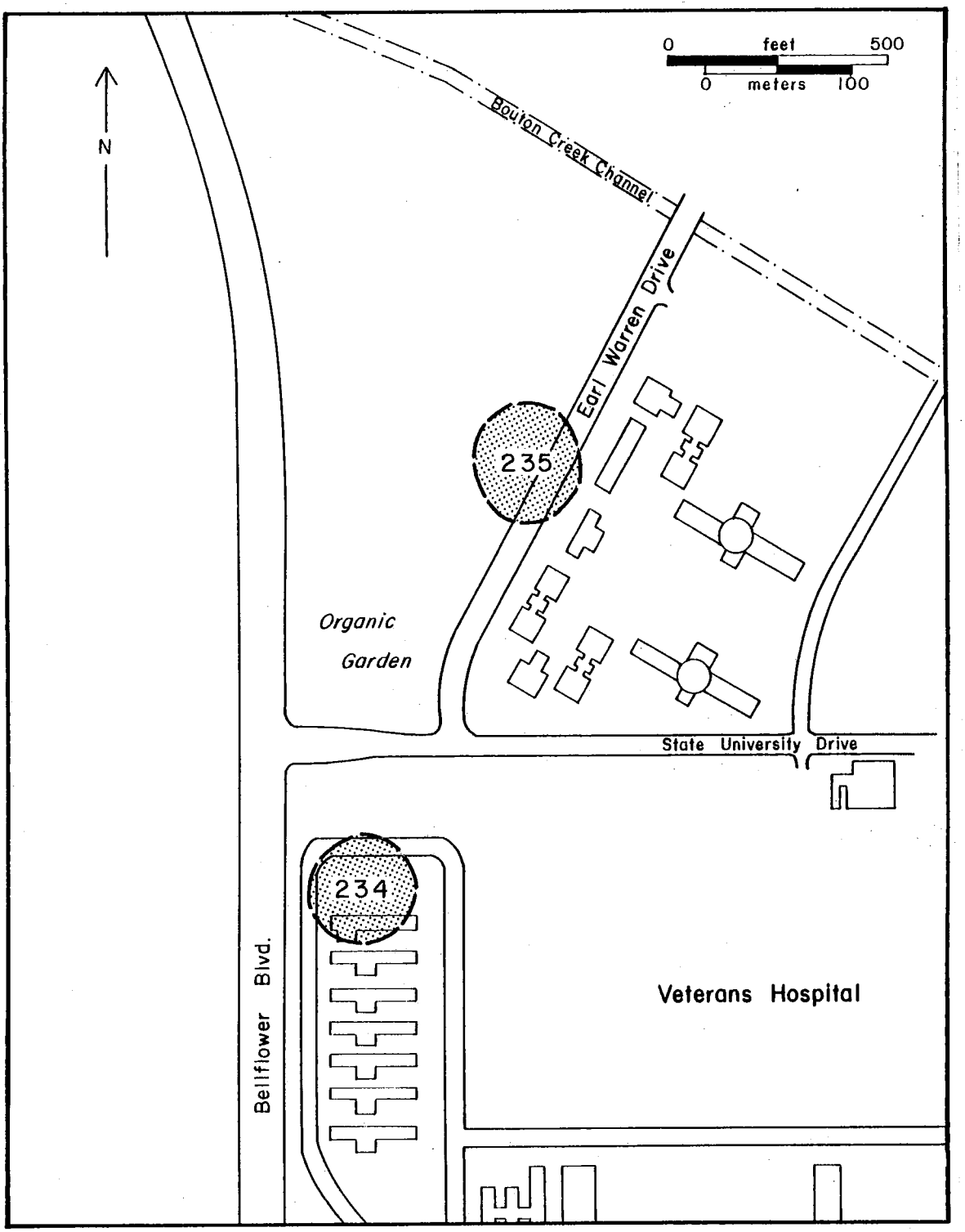

Figure 5.1. Original site plottings of CA-LAN-234/235.

Road (currently State University Drive), they uncovered human remains. Keith Dixon and Stewart Shermis visited the site. Dixon noted that the trench was already partially filled in by the time he arrived. He further states

> The midden does not appear to be over 60 cm. deep in the area around the probable burial [see sketch map, reverse side of survey sheet]. The contact zone at the base is uneven due to penetration of the midden downward as a result of animal burrows and tree-root holes (Dixon 1972)
>
> Otherwise, no new observations to add to survey sheet.
>
> No construction or further modification is planned for this area in the foreseeable future, and I therefore recommend against excavation at this time.

An osteological analysis was conducted under the supervision of Shermis. Seventy-five bones were analyzed. He concluded that the remains were of an adult male, probably 25 to 35 years old. Most of the left side of the skeleton was missing from the collections, and was presumed to have been left in the ground.

The original site form was amended with the above information in June 1974.

Veteran's Hospital Survey and Borings - 1974

The Archaeological Survey at UCLA conducted a survey and testing program of the Veterans Administration Hospital grounds, immediately south and west of CSULB in 1974. N. Nelson Leonard (1974) divided this project into three phases. Phase I was a literature search and site file check. Phase II consisted of a pedestrian survey of the parcel and Phase III involved power auger borings in the site area of CA-LAN-234.

Phase I alerted Leonard to the existence of CA-LAN-234 and its possible association with the Gabrielino rancheria of *Puvunga*. During the pedestrian survey, Leonard (1974) noted:

> The site is in the northwestern corner of the property. Approximately 400 feet of deposit is visible along the north fence. The area of highest density occurs along the paved access road between Parking Lot O and the wooden bungalows; shell and other debris falls off in density to the east and west of this north/south line. The midden extends some 300 feet south of the north fence along this line. The deposit is probably 30 to 36 inches deep along the central axis of the site. Landscaping, road construction, and parking lot grading have not significantly disturbed these remains. The northernmost bungalows have probably destroyed the southwestern end of the deposit. These data suggest that the early record of LAn-234 recorded only the northern half of the site. No artifacts were observed during this investigation. At present little can be said of the site's antiquity; it is probably safe to assume that the deposit dates to the last 3000 years.

Although Leonard does not specify, we presume that the evidence for the depth of deposit derived from 15 auger borings he conducted on the site. Of these 15, nine contained shell, with some extending to a depth of 36 inches. One fish bone, but no artifacts were observed in the cores.

Leonard also identified three other areas of possible archaeological deposits on the hospital grounds. These were in the vicinity of the golf course, the towers, and the southwest corner of the grounds. Leonard (1974) concludes that:

> Previous observations and two remnants of shell indicate that a light scatter probably extended across the area now occupied by the golf course, parking lots, the tower vicinity, and the grass field to the south of the towers. A fourth area of shell at the opposite end of the property may be the remnant of an additional archaeological site.

National Register of Historic Places Nomination - 1974

In 1973, Dixon was approached by George Salzer, Director of the Rancho Los Alamitos Historical site, to prepare a National Register nomination form for the archaeological sites at Rancho Los Alamitos and the CSULB campus (Dixon 1993). Dixon chose to two sites, CA-LAN-306, the Bixby Ranch site, and the combined CA-LAN-234/235 site on CSULB, to nominate to the National Register. His rationale was that both sites could be associated with the ethnohistoric village of *Puvunga*, and that both met criterion D for listing on the National Register; that is, the potential to provide important information on history or prehistory. As Dixon (1973) stated in the nomination form:

> Although much of the evidence of the village sites has now been destroyed by construction and recent activities, archaeological work has shown that remnants of the living areas still exist in at least nine places in an area of about 500 acres. It is probable that the Puvunga village was moved around gradually over time within this small area. These village remnants now appear on the surface as areas of dark soil, with millions of broken shell (food remains), tool-chipping waste, and an occasional stone tool.
>
> Sections where such living areas and burials are still preserved can best be seen at Rancho Los Alamitos city historical site (site LAn-306) and on the campus of California State University, Long Beach (site LAn-234/235). These two areas, which are currently visited by the public, are the only ones needed to represent Puvunga in the Register.

On the National Register form Dixon (1973) listed the size of CA-LAN-234/235 as "approximately 350' by 800'". The site encompassed about 6.4 acres, or almost 6 times larger than the original site size measured in 1960. Dixon (1993) later wrote about how he chose the boundaries of the site for the National Register.

> 350 by 800 ft. = 6.4 acres. These are the dimensions I paced off for the purposes of the application, again (as in 1960 - Altschul's note) choosing the densest portion of the cultural material as it was visible on the surface at that time and under those conditions. After consultation with colleagues, this was deemed the most conservative approach for registration purposes, always considering that the boundaries could be revised and the Register notified.

The 1973 National Register form did not contain a scaled map of the site. The longitude and latitude of the center point of the combined CA-LAN-234/235 site was listed as well as the acreage covered. Based on this information we have plotted the location of the site as specified in the National Register form in Figure 5.2. The form also amends the size and location of CA-LAn-235 based on

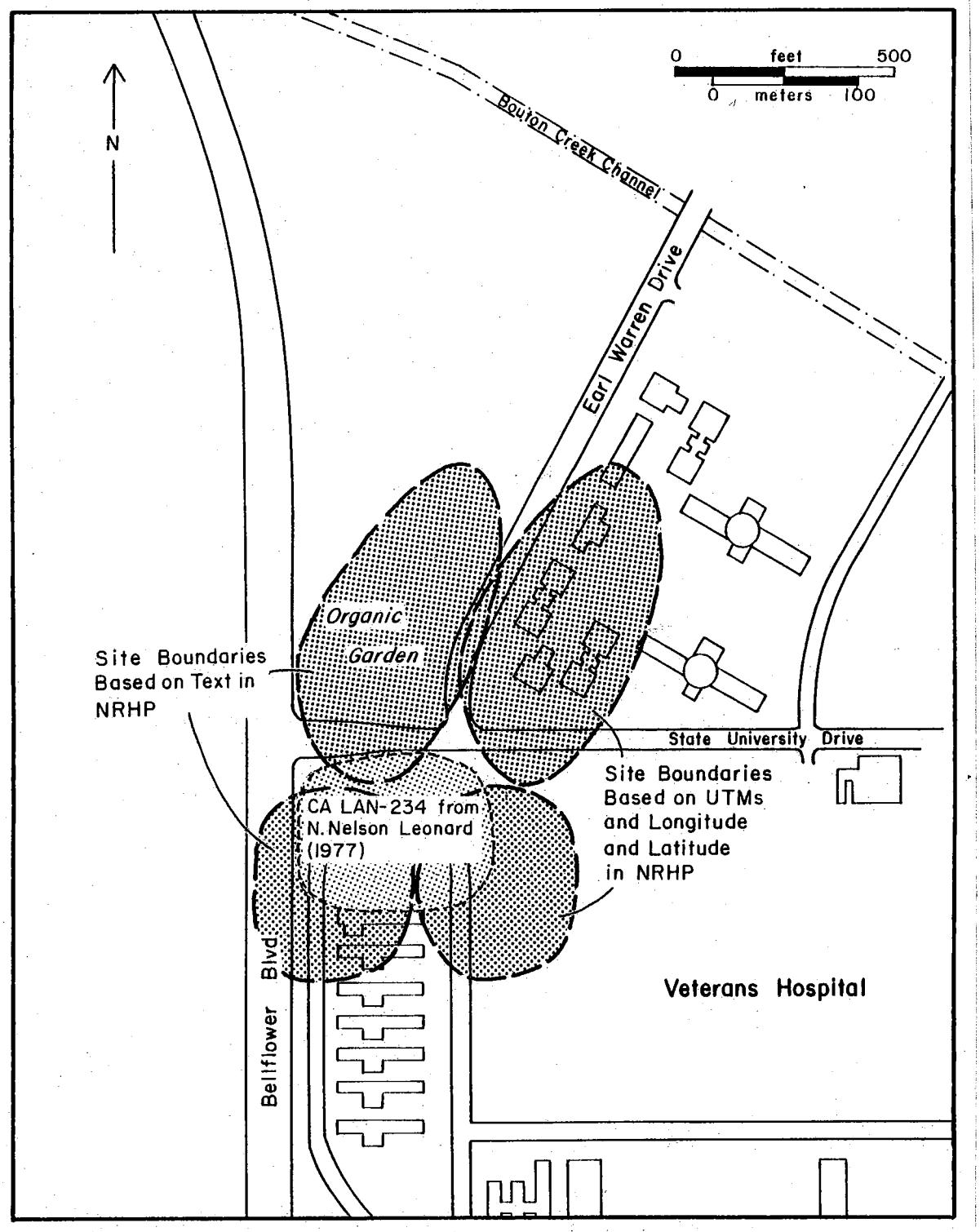

Figure 5.2. Site boundaries of CA-LAN-234/235 based on information in the NRHP nomination and Leonard 1974.

Leonard's 1974 work. Northing and Easting UTMs are provided for the center point of the extension and the form appends Leonard's description of the dimensions. Using this information the location and size of the CA-LAN-235 extension is also plotted on Figure 5.2.

The location of CA-LAN-234/235 as specified on the National Register form appears about 100 m east of the description provided in the text. Dixon (1974) states that the densest part of the midden at CA-LAN-234/235 is centered over the organic garden. Further, Leonard (1974) states CA-LAN-235 extends from Bellflower Road east, which would place the extension in line with Dixon's text. Based on written statements in the National Register form, we have provided a second plotting of NRHP location of CA-LAN-234/235 in Figure 5.2.

It is important to point out that the lack of a detailed map of the site was not unusual in National Register nominations of the 1970s. Although today a map as well as an assessment of the integrity of the site through limited archaeological testing would be a prerequisite for consideration, such was not the case when Dixon nominated CA-LAN-234/235. The sites were formally listed on the National Register of Historic Places on January 21, 1974.

CSULB Campus Survey - 1977

In 1977, Dixon surveyed the CSULB campus at the request of the Office of Physical Planning and Development. The survey was designed to inventory the property for all known cultural resources as an aid in planning. Ten "site areas" and 12 "midden traces" were identified. Two of the site areas (Site Areas 7 and 8) were coterminus with CA-LAN-235 and CA-LAN-234, respectively. At this time the two site boundaries combined were mapped variously at 27.55 or 22 acres (Figure 5.3). According to Dixon (1993):

> This is the most complete map. The purpose in this case was to fulfill the administration's request to map all surface indications of archaeological materials as accurately and completely as possible for all campus sites. The first figure (27.55 acres - Altschul's note) represents the maximum extent of the visible continuously-distributed cultural deposits as mapped at that time for LAn-234, -235; the second is more conservative, since it would omit the northern arm of the deposits just south of the drainage line if that should be tested and be found to consist of cultural material washed down the hill from the main part of the site.

Dixon (1977:15) also noted that some or all of Site Areas 4, 5, 6, 7, and 8 (now designated CA-LAN-705, CA-LAN-1003, CA-LAN-1004, CA-LAN-235, and CA-LAN-234) may at one time have consisted of a continuous zone of prehistoric occupation or activity. In 1993, Dixon suggested that this zone might additionally include the area to the east of CA-LAN-235, designated in 1973 as Midden Trace F. This maximal area encompasses well over 50 acres.

Arboretum/Japanese Garden Survey - 1978

This survey of 8.3 acres marks the beginning of a long relationship between CSULB and the cultural resource management firm of Scientific Resource Surveys, Inc. (SRS). SRS noted that the project area lies within the boundaries of CA-LAN-235. The pedestrian survey of the project area revealed shell scattered along the southern boundaries of the project area. As SRS (1978) stated

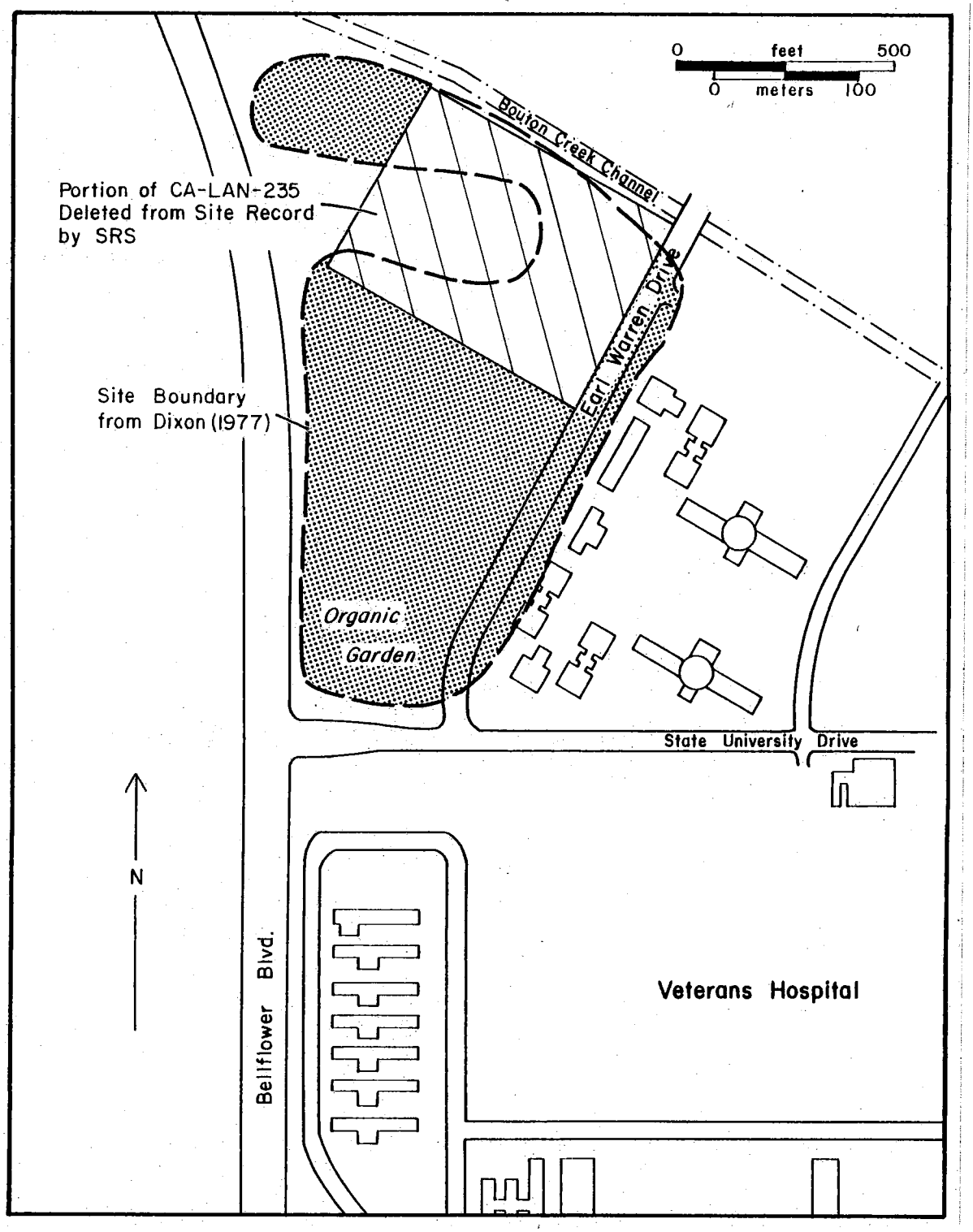

Figure 5.3. Site boundaries of CA-LAN-234 based on CSULB campus survey and SRS 1979 testing.

> The physical walkover survey revealed that indeed, a large shell midden exists in the area described. The major concentration appears to be south of the subject property with part of the surface shell scatter extending to the southern portion of the project area . . . Finite boundaries cannot be determined due to the surface disturbance and intrusive dump materials scattered over the project area.

SRS also noted a concentration of historic material in the northwest portion of the survey area. Test excavations in both the prehistoric and historic scatters were recommended.

Japanese Arboretum/Wastewater Pipeline Testing Project - 1979

In 1979 SRS was contracted by CSULB to evaluate the potential impacts of the construction of a Japanese Arboretum and a waterwater pipeline on three possible prehistoric cultural resources identified by Dixon in 1977 and one historic resource discovered by SRS in 1978. Prior to the fieldwork, SRS reviewed the literature and site files. Based on this research, they developed the "Puvunga Land Mass model". Essentially, SRS argued that during the Late prehistoric and protohistoric period, the Alamitos Bay region would have hosted an estuarine environment. The Signal Hill uplift would have divided this environment between saltwater bays and marshes to the south and freshwater creeks and marshes to the north. Dry land would have been at a premium in this environment, and much sought after by the prehistoric and ethnohistoric inhabitants. SRS uses a U.S.G.S. topographic map of Alamitos Bay created in 1863-64 as a proxy for pre-contact environmental conditions. By plotting known site locations on this map, they argue that areas below the 25 ft. contour would have been in the marsh, and therefore, largely uninhabitable. Areas above the 25 ft. contour are predicted to be prime locations for sites. SRS draws the following predictions for sites found on the CSULB campus:

> . . . LAn-705 and the 1000 series of site numbers are located adjacent to the convergence of several drainages. Excavation of LAn-705 (Carter and Neitzel 1977) and 1003 and 1004 (SRS This Report) has shown that these three sites are all redeposited and/or natural shell scatters. It is predicted that the 1000 series surrounding these sites is also not aboriginal in depositional nature.
>
> Excavation of LAn-234 (Leonard 1974), LAn-306 (Lockett 1966), LAn-271 (Stickel 1976) and LAn-275 (Stickel 1976) and the human burial recovered adjacent to LAn-235 during pipeline excavations activities, indicates that the sites above the 25-foot contour are predictably aboriginal deposits. LAn-702 is anamalous (sic) to this hypothesis since it falls on a small finger of land which may have been exposed during a late time period (recent) when the marshes were receding. This extension was solid land in 1893 but would have been marsh when most of the Puvunga land mass was inhabited during aboriginal times (sic).

SRS excavated three 1.5 m by 1.5 m units by hand and another 13 trenches by backhoe at CA-LAN-235 (excavations were also conducted at CA-LAN-1003 and CA-LAN-1004 as part of this project; these results are discussed in Chapter 6). These trenches were placed along the eastern and southern edge of the project area, where shell was observed on the surface. Soils observed consisted of alternating layers of silt and clayey silt, which were interpreted as culturally sterile. No cultural deposits or artifacts were observed. SRS recommended that this section of CA-LAN-235 be deleted from the site boundaries; an action to which the SHPO concurred. Another nine backhoe trenches were placed in the northwest section of the Japanese Arboretum site to investigate a scatter of historic

trash. SRS concluded that this deposit was not significant. John King, a Native American descendant from Los Angeles-Orange counties who was contracted by SRS to serve as a monitor for this project, concurred with the recommendations.

Parking Lot Surveys - 1980

SRS conducted two projects in 1980 that impinged on CA-LAN-234/235. The first involved the development of two parking lots by CSULB. One of these parking lots, termed Area A, was sandwiched between State University Drive to the north and the CSULB boundary to the south. The eastern quarter of the parking lot overlapped the site boundary of CA-LAN-234 as defined by Dixon 1977 (see also Leonard 1974). The second parking lot, Area B, was located in the northeast part of the CSULB campus, covering a portion of site CA-LAN-1001; it is discussed in Chapter 6.

SRS conducted a walkover of Area A, at which time they concluded that the proposed impact area was covered by imported fill. Because the construction of the parking lot required no substantial subsurface excavation, SRS argued that even if intact cultural deposits lay below the fill, they would not be impacted by the proposed action. Construction monitoring was recommended, which occurred in April 1981. No cultural deposits or artifacts were observed during construction (SRS 1981).

Japanese Arboretum/Museum Site Test Excavations - 1980

In the summer of 1980, SRS undertook the most ambitious test excavation program conducted to that point of CA-LAN-235. The purpose of the project was "to verify or negate the existence of a portion of site LAn-235, which has been officially recorded as existing within the proposed project boundaries" (SRS 1980b:1). To this end, SRS excavated six 1 m by 2 m units by hand and 20 trenches by backhoe (the report claims only to have excavated 17 trenches, but 20 are listed in Table 5 and shown on Figure 3). Most of the mechanical trenches were relatively small (on the order of 10 m), although one, long (76 m) trench, Trench 10, was excavated to provide a stratigraphic profile of the central portion of the project area.

The field results are interpreted in light of historic land use in the area. SRS details the history of modern disturbances to the project area. This information is combined with the mixed nature of the cultural assemblage to argue that intact prehistoric deposits are primarily absent. As SRS (1980b:23) states:

> Prehistoric artifacts recovered from investigations of the subject property were extremely sparse. The majority of the materials found included highly weathered shell fragments and historic debris. The depth and extent of the historic/modern debris coupled with the complex geologic strata indicate that the area has been continually naturally and historically disturbed.

The presence of shell and a small number of artifacts found throughout the trenches and units suggested to SRS that an aboriginal site did exist in the vicinity of the project area. Historic disturbances, primarily those involving land moving operations, however, had destroyed these deposits, with one notable exception. In the northwest corner of the project area, SRS uncovered a relatively small intact prehistoric deposit, which they interpreted as a dry season campsite. SRS concludes that the LAN-234/235 area was a beach during the occupation of Puvunga, and that the burial uncovered in 1972 represented an isolated event.

SRS's conclusions did not go unchallenged. In a strident critical review, Dixon and Rosenthal (1981) commented at length on a variety of subjects. Two main points, however, were made concerning the archaeological interpretation of CA-LAN-234/235. First, Dixon and Rosenthal (1981:6) argue that SRS presented no evidence to support their interpretation of a beach setting. They point out that it is extremely unlikely that upper layers of silts which SRS interprets as water-laid flood deposits would form if the area was a beach. Second, and perhaps more importantly, is the differing interpretation of the stratigraphic profiles. SRS had argued that the alternating layers of silt and clayey silt indicated modern disturbance of such an extent that no intact cultural deposits existed outside the northwest corner of the project area. Dixon and Rosenthal (1981:6), in contrast, have the following to say about the deposits:

> On pages 24-25 (which omits the midden bearing Unit 5) and Table 5 indicate midden-bearing layers even in what is considered to be a very disturbed area.
>
> When Rosenthal and Dixon viewed the side-walls of Unit 5 (which had been left unfilled in the garder area) we were impressed by the apparent integrity of the exposed midden material. The report does not seem to give weight to this information in their conclusions. The low yield of artifacts per cubic meter is not unusual in local sites, which the report might have mentioned.

At the end of the 1980 testing program, there were more, not fewer, questions about the cultural deposits at CA-LAN-234/235. SRS's data seemed equivocal. Cultural and shell material was found throughout the area, but in relatively small amounts. Disagreement among professionals raged over such fundamental aspects as the integrity of the deposit, the environmental setting, and the dating of the prehistoric occupation. Clearly, more work was needed.

CSULB Field Class Excavations - 1982

In part to resolve some of the questions left by the SRS 1980 testing project and in part in conjunction with an archaeological field methods class, a small testing project took place at CA-LAN-235 during the spring of 1982 (Bonner 1984; Rosenthal and Bonner 1984). Under the direction of E. Jane Rosenthal, the program had to objectives: (1) to determine if prehistoric cultural deposits were present and (2) to define the horizontal and vertical dimensions of such deposits (Rosenthal and Bonner 1984:4). Originally, Rosenthal expected to excavate ten 1 m by 1 m by hand. Placement of the units was judgmental, with emphasis placed in areas of proposed development. By semester end only three units had been excavated, none of which reached culturally sterile soil.

The small number of units opened by this project is a reflection of two factors. First, the project was operated as a fieldschool, which by nature tend to be slower and more methodical than excavations performed by professionally trained crew. Second, the upper levels of Units 1 and 2 were heavily compacted, with an asphalt roadway found about 11 cm below the surface. According to Rosenthal (personal communication, 1994) nearly half the fieldschool's excavation time was spent removing this disturbed layer.

Even though the number of units excavated was small, the results present the best unequivocal evidence of intact midden at CA-LAN-235. Midden and cultural material was found in all three units, with intact deposits extending from the base of the disturbed layer to the bottom of each test unit. Economic shell remains were found, dominated by *Ostrea lurida, Aequipecten circularis,* and *Chione* spp. In addition, shallow water and open beach fish remains, particularly those of the Yellow Fin Croaker, were recovered. Artifacts were limited to five flakes of Monterey chert. According to Rosenthal and Bonner (1984:9) the excavations confirmed that "the deposit is without question cultural

rather than natural in origin". The dimensions of the site as well as the age of occupation, however, could not be determined.

Outfall C, Unit 5A Testing and Monitoring - 1986

In response to the proposed construction of a sewer pipeline across the northern section of CA-LAN-235, SRS performed a testing program of the right-of-way. The program consisted of a systematic auger program. Forty auger probes were placed systematically throughout the project area. Although shell, bone, and lithics were recovered from the probes, SRS argued that the mixture of the small number of potentially prehistoric remains with historic material argues that the area lacks contextual integrity. SRS (1986a:63) concludes, "whereas intact archaeological deposits may exist in the general vicinity to the south of these auger probe transects, the project area itself no longer includes any."

The testing program was then followed by a construction monitoring (SRS 1986b). During this operation, no intact cultural deposits were found. Shell was observed scattered throughout the fill, but no artifacts were noted. According the SRS (1986b:11):

> In every instance, modern trash co-occurred with the shell fragments. Primarily restricted in horizontal extent and distinct from one another, these shell deposits formed diffuse lenses; this configuration suggests that the deposits represent the residues of individual episodes of fill dumping. Therefore, these deposits potentially originated at more than one archaeological site and may not be related.

CONCLUSION

After nearly 35 years of archaeological investigation, spanning 13 individual projects, our knowledge of CA-LAN-234/235 can best be described as rudimentary. To a certain extent, this result reflects the limited nature of past research. Since 1960, only about 1425 sq ft., or less than 0.1 percent of the site, has been excavated, most of it by mechanical means. Moreover, the vast majority of work at the site has focused on the northern periphery, where the deposits are heavily disturbed. We have no absolute dates for the site, no diagnostic artifacts, and precise few subsistence remains. We are not in a position to characterize the type of site (e.g., habitation or food extraction), its permanency, or the period of occupation.

Yet, even though we know little about the site, it has been at the center of considerable controversy and debate. Early on, the site was associated with the ethnohistoric Gabrielino village of *Puvunga*. This assessment is based more on logic than data, for without absolute dates or diagnostic artifacts there is simply no way to test this assertion. Beyond the issue of *Puvunga*, the basic features of the site are open to question. Between 1960 and 1977, the site grew from 1.14 acres to 27.55 acres in size. These changes reflect differences in the methods used to define a site. At first, Dixon was extremely conservative, including only those areas that most likely represented archaeological deposits. Later on, he changed to a more liberal approach that included all areas possibly containing archaeological deposits. Because these site definitions were based solely on surface observations, they were bound to be rather imprecise. Modern land disturbance activities were well documented for the area in and around CA-LAN-234/235, so the presence or absence of surface shell was not necessarily a good proxy for intact subsurface cultural deposits.

In this situation, one would suspect that the anchor supporting the circumstantial surface observations would come in the form of subsurface excavation data. Yet, it is precisely these data that are the most controversial. Leonard (1974) and Rosenthal and Bonner (1984) provide clear evidence that intact deposits exist, extending to depths in excess of 1 m. Surprisingly, units placed by SRS in similar parts of the site yielded very different results, or at least were interpreted very differently. SRS's conclusion that the deposit at CA-LAN-235 is largely secondary with the exception of a small deposit in the northwest portion of the site is hard to square with the data provided by others. After nearly 35 years of research, we still can say no more than an archaeological site of unknown age and unknown dimensions exists somewhere within a 27 acre area.

CHAPTER 6
PREVIOUS RESEARCH ON THE CSULB CAMPUS AND THE ALAMITOS BAY REGION

Christopher J. Doolittle

In this chapter, we expand beyond the confines of CA-LAN-234/235 to explore the archaeology of the CSULB campus and the Alamitos Bay. Our purpose is to provide perspective on the extent of archaeological research conducted in the region, the types of resources that have been documented, and the data gaps that still exist. Our discussion builds in scope. In the previous chapter we focused on one site. The first section of this chapter expands our understanding to the CSULB campus, while the second half of this chapter extends the discussion to the Alamitos Bay region in general.

CSULB CAMPUS

Ten archaeological sites and 12 traces of midden have been recorded on the CSULB campus (Dixon 1977). Traces of midden are identified as possible sites but in disturbed or suspect contexts. Since 1974, 12 survey and/or excavation projects have been conducted on seven of the 10 sites (Table 6.1 and 6.2). A thirteenthth project on campus is currently being completed by Matthew Boxt.

Table 6.1. Archaeological Projects Conducted on or Adjacent to the CSULB Campus.

Year	Site(s)	Type of Work	Report Author(s)
1974	CA-LAN-234	testing	Leonard
1975	CA-LAN-705	survey	Rosen
1977	CA-LAN-705	testing	Carter and Neitzel
1977	all	survey	Dixon
1978	CA-LAN-235	survey	SRS
1979	CA-LAN-235	testing	SRS (Desautels et al.)
	CA-LAN-1003		
	CA-LAN-1004		
1980	CA-LAN-234	survey	SRS (Desautels)
	CA-LAN-1001		
1980	CA-LAN-235	testing	SRS
1984	CA-LAN-235	testing	Bonner and Rosenthal
1986	CA-LAN-235	testing	SRS (Clay et al.)
1986	CA-LAN-235	monitoring	SRS
1993	CA-LAN-1002	testing	SRS (Whitney-Desautels et al.)

Table 6.2 Archaeological Sites Recorded on the CSULB Campus

Site	Size*	Contour	Soil	Shell	Lithics
CA-LAN-234	100m diameter	55ft	little darkening	yes	chipping waste
CA-LAN-235	30m by 150m	35ft	adobe, slight darkening	yes	chipping waste
CA-LAN-705	100m diameter	10ft	dark to light sandy	yes	none noted
CA-LAN-1000	150ft by 250ft	10ft	dark	yes	none noted
CA-LAN-1001	1000ft by 200ft	10ft	dark midden soil	yes	none noted
CA-LAN-1002	250ft by 850ft	10ft	dark midden soil	yes	none noted
CA-LAN-1003	300ft by 400ft	10ft	dark midden soil	yes	chipping waste
CA-LAN-1004	150ft by 200ft	10ft	dark midden soil	yes	none noted
CA-LAN-1005	500ft by 500ft	10ft	dark midden soil	yes	none noted
CA-LAN-1006	"small remnant"	10ft	dark midden soil	yes	none noted

*As measured by the investigator.

CA-LAN-234 and CA-LAN-235

The history of research at CA-LAN-234 and CA-LAN-235 is discussed in the previous chapter. Both sites were originally described as areas of dark soil with surface shell and lithics (Table 2). CA-LAN-234 occurs on the south side of University Boulevard and was estimated to be roughly 100 m in diameter. CA-LAN-235 is directly opposite CA-LAN-234 on the north side of the boulevard and was recorded as covering a 30 m by 150 m area. CA-LAN-235 was partly covered by several campus buildings, a service road, and a parking lot. Both sites are listed in the Nation Register of Historic Places.

CA-LAN-705

CA-LAN-705 is located in the northwest corner of the CSULB campus and extends north off of university property. CA-LAN-705 was recorded as a dark sandy midden on the north side of Atherton Street and as a light sandy midden on the south side. CA-LAN-702 also extends into Whaley Park. Several houses, a road, and a day care center have disturbed the site.

In 1975, Martin Rosen conducted a survey for the County Sanitation Districts of Los Angeles County that passed through a portion of CA-LAN-705. Shell was encountered in the northwest, southwest, and southeast corners of Atherton and San Anseline intersection and it was noted that all the shell was badly disturbed by the construction of the roads. Rosen states, "it is believed that this area does not represent an aboriginal deposit, but, that the presence of shell there was the result of similar dumping or fill activities described earlier (Rosen 1975:4)."

Archaeological Research Inc. (ARI) conducted test excavations adjacent to CA-LAN-705 for the Los Angeles County Sanitation District in 1977 (Carter and Neitzel 1977). The project area was located on the south side of Atherton Street, north of the day care center, west of the CSULB parking lot, and east of Whaley Park. Four 1.5 m by 1.5 m excavation units were excavated to sterile soil. ARI recovered shell, two lithics, and a few pieces of bone from the units. *Pectin, Chione*, and *Ostrea* were noted as being the most abundant shell genera. Although the percentages and types of shell were consistent with a prehistoric midden, it was argued that the area tested represented a secondary

deposit. ARI pointed to the high percentage of immature individuals as well as the high frequency of minor species not often found in prehistoric middens. In addition, the majority of shell retained its original color, as if they were recently deposited.

Lithic artifacts consisted of two small pieces of chert debitage and only a small amount of bone. The lack of artifacts and the suspect nature of the midden led ARI to conclude that the property they tested was fill dredged from the bottom of a shallow bay. Keith Dixon visited the project in the field and agreed with ARI's conclusions. Dixon stated;

> It is evident, then, that this specific area where the tests were conducted is where the midden either did not exist or had been destroyed by development. Further, the shell and other contents had been brought in as fill, and the source of the fill was in natural deposits rather than midden. . .
>
> In conclusion, it should be noted that CA-lan-705 does not now exist in the specific location where A.R.I. conducted its tests, but it is still evident in adjacent areas where the soil surface has not been covered or removed, though most of what remains is likely to be disturbed to some degree (Dixon 1977:20-21).

CA-LAN-1000

Dixon recorded CA-LAN-1000 during his inventory of archaeological resources on the CSULB campus (Dixon 1977). Dark soil and shell fragments were found adjacent to the northwest side of the basketball courts. Dixon noted on the site form that CA-LAN-1000 and the other nine sites on the campus "may once have been continuous deposits but there is no way to be sure by present surface indications." Based on preliminary test results, Matthew Boxt (personal communication 1994) suggests that Trace "C" is actually a southern extension of CA-LAN-1000. Boxt found no evidence of a site at the location noted by Dixon, but he did at Trace "C" located approximately 200 ft (61 m) to the southeast.

CA-LAN-1001

Midden soil and shell fragments were recorded by Dixon (1977) along the north side of Parking Lot A and a recreation field. The midden was distinguished as being a few inches higher than the surrounding plowed soil. The site was plotted as approximately 200 ft wide by 1000 ft long (61 m by 305 m). The area to the south of the site was disturbed by a parking lot and recreation field. In 1980, Scientific Resource Surveys conducted a pedestrian survey in the open field on the north side CA-LAN-1001 (Desautels 1980). At the time of the survey, the parcel was described as "an open weed covered field with obvious imported fill overburden (Desautels 1980:1)." No archaeological resources were apparent in the project area. SRS did not recommend any further mitigative measures.

CA-LAN-1002

During the 1977 inventory of archaeological resources (Dixon 1977) dark midden soil with shell fragments was visible in a plowed field in the north central portion of the campus. Some of the surrounding soil was noted as being dumped from other locations. Dixon described CA-LAN-1002's

boundaries as artificial and probably extending in all directions, but roads and parking lots probably obscured or destroyed these extensions.

In 1993, SRS tested CA-LAN-1002 (Parking Lot "O") by placing 15 16-inch auger holes laid out in a grid pattern across the project area (Whitney-Desautels et al. 1993). The purpose of the project was to "test the predictive model established in 1979 and determine whether the site recorded as CA-LAN-1002 contained any cultural materials or if it consisted solely of natural marsh and fluvial deposits (Whitney-Desautels et al. 1993:16)." No cultural materials or midden soil was observed during testing. Fill dirt and modern debris were noted in the majority of the auger holes.

An archaeological Peer Review committee examined the auger holes and concurred with SRS that an archaeological site does not exist within Parking Lot "O". This group included Dr. William Wallace (CSULB, USC), Dr. Claude N. Warren (UN), Dr. Mark Raab (CSUN), Dr. Jean Hudson (UCLA), Mr. Joe Pope (SHPO), and Vincent Ibanez (Native American observer). Boxt (personal communication) tested the area prior to the construction of the sports arena and also concluded that an archaeological site is not present.

CA-LAN-1003

CA-LAN-1003 was recorded as a visible midden in a plowed field located in the northwest portion of campus. CA-LAN-1003 is directly north of CA-LAN-235. The midden area appeared to be slightly higher and darker than the surrounding light colored soil of the plowed field. Shell fragments and chipping waste were present, although very little of the latter was noted (Dixon 1977).

SRS conducted subsurface testing in portions of CA-LAN-1003 to evaluate potential impacts to the site resulting from a wastewater pipeline project and the Japanese Arbotetum complex (Desautels et al. 1979). SRS reported that no midden or artifacts were visible on the surface at the time of testing. Testing consisted of one 1.5 m by 1.5 m hand excavated unit and nine backhoe trenches 3.5 m in length. SRS reported that sterile subsoil was encountered at a depth of 20 cm in the hand excavated unit. Backhoe trenches were excavated to an average depth of 2.05 m. No artifacts were recovered from either the test units or the backhoe trenches. SRS placed a core in the bottom of the unit and found evidence of two types of freshwater snails between 90 cm and 120 cm. They concluded that this area was once a freshwater marsh.

CA-LAN-1004

CA-LAN-1004 was recorded as a 150 ft by 200 ft (46 m by 61 m) area of dark midden soil and shell fragments. It is located a couple of hundred feet (approx. 60 m) to the southeast of CA-LAN-1003. The site may have extended farther to the east, but it is now covered by an adjacent parking lot. As with the rest of the 1000 series sites, Dixon notes on the site form that this locality may once have been continuous with adjacent sites.

SRS placed one hand excavated unit and eight backhoe trenches within the site boundaries of CA-LAN-1004 as part of the testing for the wastewater pipeline and the Japanese Arboretum projects (Desautels et al. 1979). The 1.5 m by 1.5 m hand excavated unit was placed in the middle of the site and taken down to a depth of 120 cm. An additional 20 cm was taken down as a core sample. One artifact, a projectile point, was recovered from a trash fill layer at a depth of 20 cm. The trash fill layer contained miscellaneous refuse including glass, metal, concrete, and asphalt. *Chione, Pecten, and Ostrea* were also found in the fill zone. The eight backhoe trenches averaged 3.23 m in length and 2.18

m in depth. No in-situ cultural materials were noted in the trenches. SRS concluded that the shell and the artifact were redeposited in historic times.

Boxt (personal communication 1994) investigated CA-LAN-1004 as part of his campus wide testing project. Preliminary results suggest that intact midden does exist in this location, but at a depth of 3 m. Boxt noted that the top 3 m was imported fill.

CA-LAN-1005

CA-LAN-1005 is located in the central portion of the campus along the southern edge of the track field. The dark midden soil and shell were barely visible when Dixon recorded the site in 1977. Prior to 1993, no additional work had been conducted on the site. Boxt (personal communication 1977) tested CA-LAN-1005 and several nearby traces. Boxt has since modified the site boundaries of CA-LAN-1005 to include Trace G to the north where intact midden was encountered.

CA-LAN-1006

The only work conducted at CA-LAN-1006 consisted of the original site recording by Dixon (1977). The site was described as dark midden soil with shell fragments, but it was mostly destroyed by a road, a fence, and a housing development to the east. Boxt did not excavate in CA-LAN-106, but he did test Trace "H" located approximately 200 feet to the west; he found no evidence of cultural deposits.

Summary and Conclusion - CSULB

With the exception of CA-LAN-1006, all sites and several of the midden traces recorded by Dixon (1977) have been subjected to archaeological testing. Even so, the archaeology of the CSULB campus is confused and poorly understood. For the most part, this situation is due to the developed nature of the property. Years of land modification and construction have obscured archaeological deposits to the point that the surface is often a poor indicator of subsurface remains. SRS generally used the disturbed nature of the property as evidence that the surface indications observed by Dixon were redeposited fill of no scientific value. Recent excavations by Boxt (personal communication 1994) has shown that development of the CSULB property often involved placing fill over the existing surface. Through time faunal- and bioturbation processes have brought buried archaeological deposits to the surface. Boxt has found that the presence of cultural materials on the surface is usually a good indicator that buried subsurface remains exist somewhere in the area, but not necessarily immediately below the material. Thus, one can test a midden trace and not find cultural material, but find intact subsurface deposits 10 to 15 m away. Given these findings, it is important to view statements of the absence of cultural deposits based on limited testing with some degree of skepticism. At this point a dual strategy of intensive testing followed by monitoring seems to be in order.

Beyond resolving questions about the nature of the archaeological record, little has been learned concerning the prehistory of the area. This situation should change with the development of a campus-wide research design and the systematic large-scale excavations conducted by Boxt.

ALAMITOS BAY REGION

Twenty-seven archaeological projects have been conducted within 3 miles of the CSULB campus (Table 6.3). These projects have resulted in the recording of 39 archaeological sites (Table 6.4 and Figure 6.1). Sites subject to archaeological work that are relevant to the current project are discussed below.

Table 6.3. Archaeological Projects Conducted Within 3 Miles of CSULB.

Year	Site(s)	Type of Work	Report Author(s)
1953	CA-LAN-270	excavations	Simpson
1958	CA-ORA-256	excavations	Redwine
	CA-ORA-265		
1972	CA-LAN-270	excavation report	Bates
1973	CA-LAN-271	survey/excavation	Cameron
1974	CA-LAN-702	survey	Cooley and Desautels
1974	CA-LAN-306	excavations	Zahniser
1975	CA-LAN-705	survey	Rosen
1975	none	survey	Clewlow
1978	CA-LAN-702	excavations	Cottrell and Carter
1979	none recorded	survey	Van Horn
1979	CA-ORA-1352	survey	Van Horn
1979	CA-LAN-274	excavations	Cooley
	CA-LAN-275		
1980	CA-LAN-702	excavations	Allen
1980	CA-ORA-256 to	partial survey	Van Horn
	CA-ORA-263		
	CA-ORA-850 to		
	CA-ORA-853		
1980	CA-ORA-1352	excavations	Van Horn
1981	CA-ORA-260	excavations	SRS
	CA-ORA-261		
	CA-ORA-262		
	CA-ORA-852		
1981	none	survey	Van Horn and Brock
1984	none	records search	Padon
1985	CA-LAN-837	records search	Padon
	CA-LAN-838		
	CA-LAN-839		
1985	CA-LAN-271	survey	Bonner and Mason
1987	none	survey	Cottrell and Dibble
1988	none	survey	Motkin
1990	CA-LAN-1821	survey	McKenna
1991	15 sites	records search	Stickel
1993	none	survey	DeBarros and Mason
1993	none	survey	Kelsey and Magalousis
1993	none	survey	Demcak

Table 6.4. Archaeological Sites Within 3 Miles of the CSULB Campus.

Site	Size*	Contour	Artifacts	Comments
CA-LAN-102				no site form at UCLA
CA-LAN-131	not reported	33ft	none noted	burial found 5ft deep
CA-LAN-231	50m diameter	20ft	none noted	depth up to 30cm
CA-LAN-232	30m diameter	60ft	none noted	depth up to 4ft
CA-LAN-233	25m by 50m	30ft	chipping waste	possible up to 4ft
CA-LAN-236	300m long narrow strip	55ft	none noted	along golf course
CA-LAN-270	not reported	17ft	numerous	see below
CA-LAN-271	100m by 200m	70ft	chipping waste	see below
CA-LAN-272	not reported		none reported	skull found 35ft below ground
CA-LAN-273	100m diameter	50ft	chipping waste	bowl rim and hammer stone noted
CA-LAN-274	100m diameter	50ft	none reported	see below
CA-LAN-275	100m diameter	60ft	none reported	see below
CA-LAN-306	110m by 300m	50ft	numerous	see below
CA-LAN-698	50m diameter	25ft	chipping waste	several mortars unearthed
CA-LAN-699	15m by 40m	25ft	chipping waste	may be part of LAN-698
CA-LAN-700	100m diameter	20ft	none noted	badly disturbed
CA-LAN-701	250m long	10 to 35ft	chipping waste	golf course
CA-LAN-702	300m by 150m	10ft	numerous	see below
CA-LAN-703	100m by 200m	25ft	chipping waste	
CA-LAN-704	27m by 60m	40ft	none noted	
CA-LAN-830	100ft by 20ft	15 to 20ft	11,000 beads	burial excavated 1972, possibly more (C. Irwin)
CA-LAN-831	50m diameter	15ft	none noted	over 6ft overburden, 12 inch deposit
CA-LAN-837	125m by 30m	75ft	quartz qrystal	
CA-LAN-1007	not reported	75ft	chipping waste	possible human bone excavated by CSULB in 1979
CA-LAN-1821	15m by 100m	20ft	none observed	
CA-ORA-143/2	700ft by 300ft	50ft	32 on surface	PCAS excavated in 1963, SCAS excavated earlier
CA-ORA-256	200ft by 300ft	50ft	none noted	
CA-ORA-257	220ft by 350ft	50ft	ground stone	
CA-ORA-258	600ft by 350ft	50ft	82 on surface	depth up to 4ft, LBSC excavated in 1955
CA-ORA-259	400m diameter	65ft	32 noted	depth up to 2.4ft, LBSC excavated 9 pits in 1955
CA-ORA-260	"small"	50ft	16 noted	12-16 inches deep, excavated 2 pits in 1955
CA-ORA-261	200ft by 100ft	60ft	ground stone	12 inches deep, 3 test pits in 1955
CA-ORA-262	150ft by 50ft	55ft	ground stone	shallow depth
CA-ORA-263	300m diameter	60ft	ground stone	12 inches deep
CA-ORA-264	500ft by 300ft	50ft	31 on surface	1 or 2 burials
CA-ORA-850	74m by 45m	5ft	none noted	low density Pecten and Chione
CA-ORA-851	35m by 46m	2-3ft	none noted	low density Pecten and Chione
CA-ORA-852	74m by 100m	30-40ft	none noted	medium to dense scatter of Pecten and Chione
CA-ORA-1352	200m by 50m	10ft	none noted	freeway destroyed a portion of site

*As measured by the investigator.

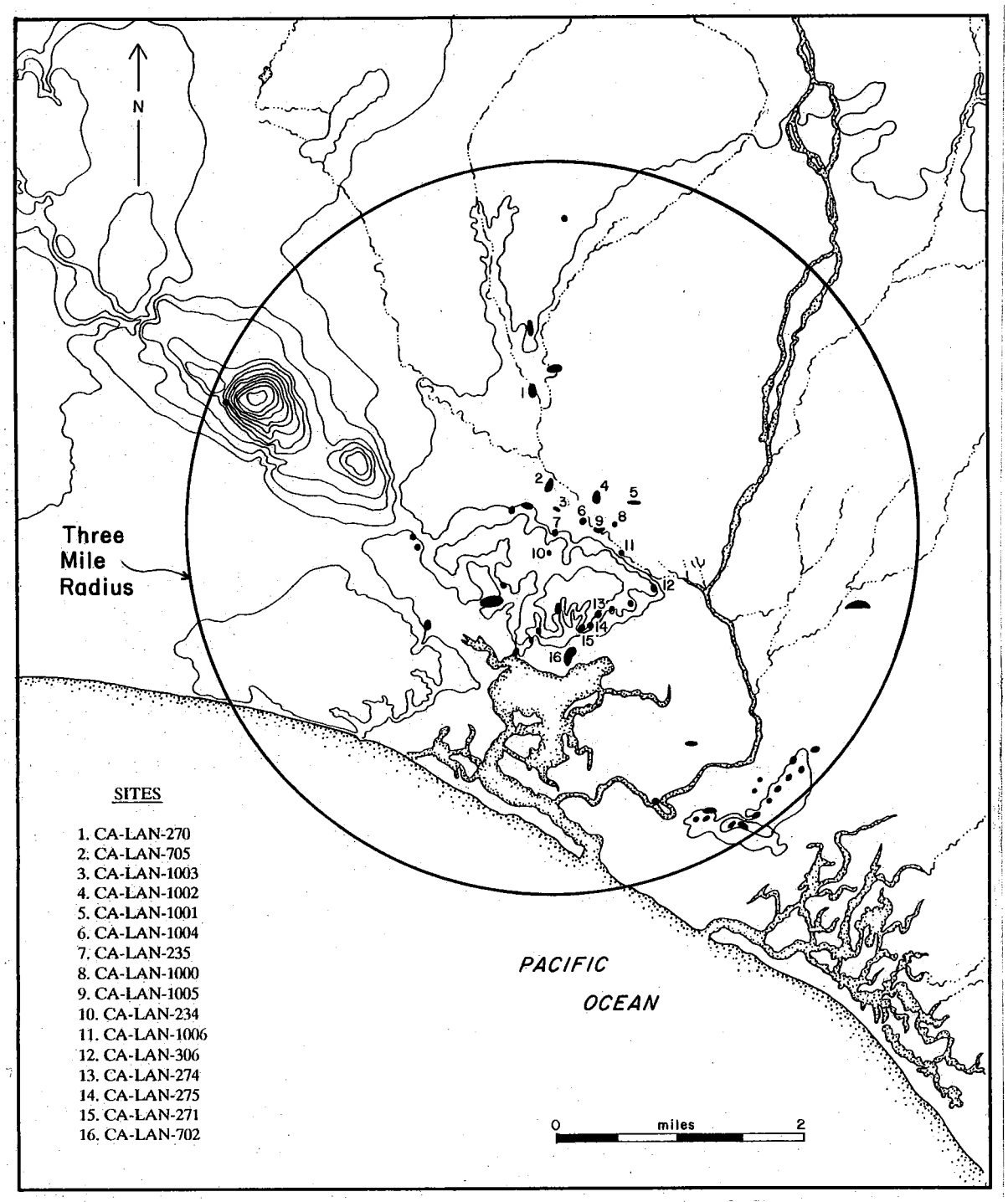

Figure 6.1. Archaeological sites in the Alamitos Bay Region (site locations purposely misplotted -- relative positions are accurate).

CA-LAN-270

In January of 1953, the Los Altos site (CA-LAN-270), located approximately one mile north of CSULB was exposed during construction activities by the Whaley Construction Company. Ethel Ewing of Long Beach State College (CSCLB) was contacted and allowed to conduct excavations at the site for 23 days. CSCLB excavated for 23 days, dug 34 units and three trenches down to sterile soil. R.D. Simpson wrote a short one page article in the *Masterkey* describing the collection and the site as a Shoshonean burial ground due in part to the one cremation, fourteen flexed burials, and numerous other disturbed burials that were discovered (Simpson 1953).

In 1972, Eleanor Bates of CSCLB wrote a descriptive report on the 1953 work (Bates 1972). Excavations at CA-LAN-270 were confined to an area measuring 55 ft by 75 ft (17 m by 23 m). The site would have been defined over a larger area had it not been for modern development. The midden was described as a mixture of sand and silt overlying sterile clay. Depth of the midden varied between 5 inches and 65 inches. These numbers too would be larger if the site had not been found during land leveling operations. The site was located next to fresh water as evidenced by the dark streaks of biotite in the soil.

Approximately 2700 artifacts were recovered from CA-LAN-270, including more than 2,000 olivella beads. The majority of artifacts recovered from the excavation were dated to the Late Prehistoric period. These include small projectile points, circular fishhooks, and pottery. Faunal remains are not tabulated in the article, but it was reported that food resources were primarily shellfish, deer, and small mammals. Shellfish were dominated by abalone, clam, and pecten. Bates reports that twenty one burials including one cremation was excavated, but scattered burned bone across the site seemed to indicate more cremations were once present. Bates concludes that CA-LAN-270 was a fairly typical village site. "The most reasonable interpretation seems to be that of village which saw fairly steady year-round occupation with a concentrated burial area (Bates 1972:55)."

CA-LAN-271

CA-LAN-271 was recorded by Dixon in 1959 as a shell midden on top of a bluff overlooking the Pacific Coast Highway. The midden and surrounding soil were described as a brown sandy loam, with the site distinguished by the presence of pectin and clam shell. From a road cut profile, the midden depth seemed only to be a few inches (ca. 10 cm). Lithics were scarce on the surface and in the profile. The site was 100 m by 200 m in size and under cultivation. Service roads and an oil well were also present on the site.

In 1973, Public Antiquities Salvage Team (PAST) of California State University Fullerton resurveyed a portion of CA-LAN-271 and excavated seven 1 m by 1 m test pits on a relatively undisturbed portion of the site (Cameron 1973). This research was precipitated by a cut and fill operation that was being conducted prior to the construction of the Villa Pacifica Apartments. The average depth of the midden in six of the test pits was 21 cm. The seventh test pit was excavated near the center of the site to a depth of 70 cm. Artifacts recovered from the test pits included three pieces of possible ground stone, four flakes, and an asphalt nodule. One of the flakes was described as a possible projectile point fragment and another was obsidian. *Pectin* and *Chione* were common in all units.

E. Gary Stickel (1976) excavated on a portion of the site north of the Villa Pacifica Apartments in 1974. Fourteen 1 m by 1 m units were excavated and only shell and seven flakes were recovered. After Stickel's excavation, the remainder of the site was said to have been graded and destroyed. In 1985,

SRS conducted a survey of the property and noted that most of the site had been recently graded to a depth varying between 4 feet and 7 feet (ca. 1.2 m and 2.1 m) below the original ground surface (Bonner and Mason 1985). A cut visible near a parking lot suggested that cultural material does exist underneath the asphalt. The soil in the cut was gray and contained the kinds and frequencies of shell typical of prehistoric middens.

> Because the face of the cut along the parking lot is covered by loose dirt forming a talus slope, it was not possible to inspect a profile of the actual in-place deposits. Therefore, it was not possible from field inspection to determine whether this material represents an in-place archaeological site or fill removed from a site which has already been destroyed (possibly CA-LAN-271). According to Mr. Joe D'Alessio of the Bixby Ranch Company, the material under the parking lot does consist of fill from elsewhere on the property (Bonner and Mason 1985:12).
>
> Because the prehistoric cultural material under the parking lot consists of redeposited fill and the rest of the property has already been graded to a depth of approximately two meters, no further prehistoric archaeological work is required on the property (Bonner and Mason 1985:13).

As far as can be determined, SRS made their recommendations based primarily on Mr. D'Alessio's statement.

CA-LAN-274 and CA-LAN-275

CA-LAN-274 and CA-LAN-275 were recorded by Dixon in 1961. Both sites were located on the edge of a bluff and described as light concentrations of shell in an area of slightly darkened soil. No lithics were observed at either site. In 1974, Stickel conducted investigations on a portion of CA-LAN-275 and indicated that a small remnant remained intact (Stickel 1976). Archaeological Resource Management Corp. (ARMC) subsequently conducted test level investigations in this remaining portion of CA-LAN-275 and at a small visible remnant of CA-LAN-274 (Cooley 1979).

ARMC surveyed an area that encompassed four archaeological sites; CA-LAN-271, CA-LAN-273, CA-LAN-274, and CA-LAN-275. Field results suggested that CA-LAN-271 and CA-LAN-273 no longer existed and that very little remained of the other two. ARMC placed three 1 m by 1 m test units in CA-LAN-274 that produced evidence of a disturbed prehistoric midden. One of the units was completely disturbed and only a few shell fragments were noted. The other two units contained midden between depths of 15 cm and 40 cm below ground surface. ARMC concluded that "These areas were, however, obviously so limited in areal extent and in content of cultural materials as to be of minimal utility for conducting archaeological analyses (Cooley 1979:11)." One 1m by 1 m test unit and two backhoe trenches were placed in the area of CA-LAN-275 to test for intact cultural materials and nothing was encountered.

No lithics or other artifacts were recovered in the test units. Shell was restricted to three genera *Pecten, Chione,* and *Ostrea*. Two radiocarbon dates were obtained from the shell. One date, 7575 ± 170 B.P. was obtained from shell collected by Stickel in 1974 at CA-LAN-271. The other date came from CA-LAN-274 and proved to be modern, less than 150 years old. The difference between the two dates was attributed to one of two factors, contamination of the samples or two occupations separated in time. The lack of artifacts, paucity of shell, and widely separated dates precluded ARMC from determining the age of the sites.

CA-LAN-306

CA-LAN-306, also known as the Bixby Ranch Site, is located on a hill overlooking the present San Gabriel River channel. Dixon nominated CA-LAN-306 along with CA-LAN-234 and CA-LAN-235 to the National Register of Historic Places in 1974. The site was described by Dixon in 1964 as a concentrated midden on the east extension of the hill covering the surrounding edges of the bluff. A light scatter of shell on the west portion of the hill was also reported, but not included in the site area calculations. The midden was "well over 1 ft" in depth. Dixon notes on the site form that the nearby Los Altos site (CA-LAN-270) may be better candidate for the historic Gabrielino village. Another note on the site form states that the Smithsonian Institution may have excavated at the site in the 1930s, but this turned out to refer to the visits of J.P. Harrington.

In 1972, Dixon (1972a) published an article about the ethnohistoric Gabrielino rancheria *Puvunga* and its relationship to CA-LAN-306 and other archaeological sites in the area. Dixon noted that Robert Pence and Gerald Williams (CSULB students) tested CA-LAN-306 in 1964. To date, we have been unable to track down the field notes from this project. In the *Puvunga Newsletter* No. 1, however, Dixon (1972b) states that 36 artifacts were collected along with 199 pieces of unmodified bone. The depth of the midden reached 100 cm, although Dixon (1972b) stated that it was probably redeposited. William Lockett collected artifacts from the surface of CA-LAN-306 between 1963 and 1965. Sixty eight of these artifacts were turned over to the Rancho Los Alamitos in 1972. Dixon notes that artifacts from these studies include seed-grinding implements, mortars and pestles, projectile points, lumps of asphalt, shell beads, and historic objects.

Jack L. Zahniser conducted excavations at CA-LAN-306 during the summer of 1973 (Zahniser 1974). Twenty-nine units of varying sizes were excavated to sterile soil. The depth of the midden 8reached 30 cm. Seven projectile points were recovered from the units. Five of the points measured between 1.8 cm and 2.8 cm in length. Four being leaf shaped and one triangular and serrated. The small size and shapes of the points are suggestive of a late prehistoric or ethnohistoric date. The other two points found were roughly 4 cm to 5 cm long. Ten scrapers, 152 lithic waste fragments, five to seven pieces of ground stone, and 37 pieces of modified shell were also recovered. *Pectin, Chione,* and *Ostrea* were the most common genera of shell recovered in the units. Faunal remains were not analyzed, although Judy Suchey examined the collection for human remains and found none. Historic artifacts included brick, tile, concrete, glass, china, nails, and plastics. One piece of amber colored glass that seemed to have been retouched along one edge and 13 Cerritos Brown sherds from the site suggest that the site was occupied during the protohistoric to historic period transition as well.

CA-LAN-702

CA-LAN-702, known as the Sims Pond site, is located along the west edge of the Pacific Coast Highway south of Colorado Street. It was recorded in August of 1974 and described as a very dark gray midden with abundant shell and fish bone. Some disturbances, such as a dirt road and oil facilities, were also noted. Several mano fragments and some chipping waste were observed on the surface. Site size was estimated to be 300 m by 150 m. In June of 1974, ARI surveyed a parcel of land slated to be developed into the Pacific Highland Townhouses (Cooley and Desautels 1974). This survey was completed before the site form for CA-LAN-702 was submitted. ARI recorded an archaeological deposit 50 m by 50 m in the same area and recommended testing be conducted before construction.

Testing at CA-LAN-702 was conducted in 1975 by ARI (Cottrell 1978). Twenty-two backhoe trenches were excavated to determine the horizontal and vertical limits of the midden. After trenching,

three 2 m by 2 m hand excavated units were placed in the southeast part of the site which proved to have the deepest and least disturbed midden. The midden depth in this area ranged between 40 cm and 70 cm below datum. ARI reports 145 artifacts, 185 pieces of bone, and an abundance of shell was recovered from these units. Three more units were excavated across the site in areas where midden was detected in the trenches. Depth of midden in these units ranged between 25 cm to 40 cm, and 22 artifacts, 31 pieces of bone, and some shell were recovered.

Artifacts recovered during testing included four manos, two fragments of metates, five chert cores, five chert projectile points (four arrow and one dart), one chert drill, 35 utilized flakes, 99 waste flakes, six *Pecten* rattles, three *Olivella* beads, one quartz crystal, one incised piece of sandstone, one split pebble, two manuports, 26,303 pieces of shell (86 percent were *Pecten, Ostrea,* and *Chione*), and over 200 pieces of bone (cottontail, ground squirrel, gopher, fish remains, shark and ray vertebrae, and bird).

A detailed analysis was conducted on the shell remains to test for internal stratigraphic differences of the midden. The analysis was designed to test for differences in shellfish collecting patterns over time. Results of the analysis defined three bands of midden; a disturbed band at the top, a middle band with fewer specimens of *Ostrea* and more *Chione* and *Pecten*, and a lower band with a higher proportion of *Ostrea* and *Tivela*. These differences were used to support the hypothesis that two different occupation periods and two different collection strategies were present at the site (see Carter 1978). Radiocarbon dates were also obtained from the two bands of occupation. Two samples for the upper band dated to 1430 ± 160 B.P. and 770 ± 140 B.P. One sample from the lower band dated to 3030 ± 190 B.P. These results seem to support the hypothesis for two different periods of occupation. However, no artifacts were recovered from the lower band that were diagnostic of the earlier time period.

In 1979, ARMC excavated in the undisturbed midden defined by ARI prior to development of the property (Allen 1980). A total of 52 m^2 was excavated in 14 units. Based on the data from ARMC's work, the ARI hypothesis of two periods of occupation separated by a long period of time was rejected. Four additional radiocarbon dates were obtained whose midpoints ranged between A.D. 230 and A.D. 900. All seven dates indicate that the site was occupied intermittently over a period of 2500 years. Thirteen flakes of Coso obsidian were analyzed and rind thicknesses ranged between 5.0 and 8.1 microns. No correlations were found between hydration thickness and depth of midden or percent of oyster. A detailed analysis of the three dominant genera of shell (*Chione, Ostrea,* and *Pecten*) seriated the midden into four different intervals. "At the Sims Pond Site procurement strategies were adjusted in the context of a changing shellfish environment. Both predator-prey dynamics and bay siltation acted in concert to produce the gradual replacement of oysters by clams through time (Allen 1980:169)."

Over 300 artifacts were recovered from the excavation units. These include 10 small projectile points, over 1200 pieces of debitage, over 100 lithic tools, almost 80 manos and metates, 75 shell artifacts, and 16 bone artifacts. "What is most striking is the high degree of continuity exhibited in the tendency for examples of most types to be found across all four segments of the midden. There are few presence/absence changes indicated (Allen 1980:134)." Faunal remains included 1296 bones representing 45 different taxa and 105,466 specimens of shell were collected representing 47 different species. Two features, a small hearth and a cremation were encountered.

> A broad spectrum of subsistence strategies was practiced by the inhabitants. Shellfish provided only one segment of the aboriginal diet which included those fish and marine mammals which could be captured in relatively shallow waters around the bay shore, both large and small mammals, rodents, reptiles, amphibians, and both migratory and resident birds. Indirect evidence of plant food processing comes from the abundance of mano and

metate fragments used primarily to grind hard will grass seeds and the few mortar and pestle fragments usually associated with acorn milling.

Continuous, year-round occupation of the site is not a likely fit to the evidence if only because if shellfish made up any appreciable portion of the diet of even the smallest group over more than two thousand years this would have left far more shell remains than are indicated (Allen 1980:172)."

Summary and Conclusions - Alamitos Bay

With the exception of the Sims Pond site, no site in the Alamitos Bay region has been the object of intensive, systematic data recovery. Excavations at the Los Altos and the Bixby Ranch sites have been of a sufficient nature to characterize the occupation. Test excavations at other sites have been largely unproductive. Our knowledge of the culture history of the area, therefore, is rudimentary.

Of the three sites in the Alamitos Bay region that can be dated, two (Los Altos and Bixby Ranch) date to the late prehistoric and possibly the ethnohistoric periods, and one (Sims Pond) is a multicomponent site dating to the Intermediate and Late prehistoric periods. Neither the Los Altos or Bixby Ranch sites have been dated through absolute means; their dates being attributed solely on the basis of diagnostic artifacts. Given the paucity of excavation at either site, it is quite possible that earlier components exist. Moreover, Bates' interpretation that the Los Altos site dates between A.D. 1000 and 1400 should be viewed a cautiously; a more likely range is between A.D. 1000 and 1800.

Even though little work has been conducted in the Alamitos Bay region, many archaeologists presume that most of the shell middens that dot the region date to the Late prehistoric or ethnohistoric periods. This interpretation is based largely on recent, unpublished work at the CSULB campus by Boxt. At least four sites have been identified, all of which date to the post A.D. 1500 period (Matthew Boxt, personal communication 1994).

In general, two types of sites have been identified in the Alamitos Bay area. The first type, represented by the Los Altos and Bixby Ranch sites, is characterized by relatively deep middens, substantial shell and faunal remains, and a diverse artifact assemblage. A cemetery was found at Los Altos and it is possible that a cemetery might also exist at Bixby Ranch. Both sites appear to have been occupied year-round by a substantial population.

The second site type, typified by the Sims Pond site, is basically a midden site. Shell and animal bones dominate the assemblage, with generally a sparse chipped and ground stone assemblage being evident. An isolated burial was found at CA-LAN-234, while an single cremation was uncovered at the Sims Pond site. Allen (1980) argues that the Sims Pond site was occupied as a temporary camp to procure wetland resources periodically throughout the year. This interpretation is reasonable, although we suspect that middens represent a diverse set of activities and that future excavations might provide data that will allow this category to be divided further along functional lines.

The last two chapters indicate that archaeologists have been reasonably successful in identifying archaeological sites. They have been less successful in addressing issues of culture history and culture process. At this point, we can use the available data to construct models, but these models and the hypotheses derived from them must be considered preliminary in nature. This process is important, however, for without an interpretative framework we can never hope to address two goals of this project; namely, what is the nature of CA-LAN-234/235 and is it associated with *Puvunga*? With these caveats in mind, then, we turn our attention to this task.

CHAPTER 7
CULTURAL GEOGRAPHY IN THE LONG BEACH AREA

Donn R. Grenda and Jeffrey H. Altschul

The archaeological and ethnohistoric contexts established in Part I and the previous chapters of Part II provide the background for our model of Protohistoric Gabrielino settlement in the *Povuu'nga* area. Our primary goal in developing this model is to account for the archaeological sites in the Alamitos Bay area. But our objectives extends beyond *Povuu'nga* and the archaeology of the CSULB campus. To resolve the nature of settlement and site types anywhere in the Los Angeles Basin, one must first confront theoretical issues embedded in the study of hunters and gatherers. Issues such as the nature of sedentism, community settlement patterns, the rise of complexity, and the relationship between inland and coastal settlements have been discussed but not resolved in debates about indigenous adaptation to the southern California Bight for over two decades. Our model of coastal settlement is but a step in direction of understanding these issues. It is not the final word, but rather represents a scientific construct that can be tested, with the parts that hold true incorporated into a more refined model and the parts found to be in error discarded. The model presented herein asserts that coastal settlement was highly variable. Village size, permanency, and sociopolitical independence were directly correlated with the diversity and quantity of resources in relatively small surrounding catchments. In relatively impoverished or densely populated areas, social networks took on heightened importance as lines of economic redistribution.

BACKGROUND INFORMATION

Traditionally, archaeologists have argued that the lagoons and estuaries of southern California were favored locales for habitation (Figure 7.1). Lagoonal settlements are conceived of as large, permanently occupied villages that housed relatively complex, stratified societies. Most of these ideas are derived from ethnographic accounts of major Gabrielino and Chumash settlements, such as those at Malibu and Mescalitan Island. But these settlements are found in relatively stable coastal environments and represent the apex of the settlement system. Were such settlements really the norm, especially in highly unstable estuarine settings?

In recent years, a number of researchers (Altschul et al. 1992; Arnold 1993; Erlandson 1988; Glassow and Wilcoxon 1988; Grenda and Altschul 1994a; Jones 1992; True and Waugh 1982; Vanderpot et al. 1992) have advanced their ideas concerning prehistoric settlement on the coast. Most agree that highly mobile hunter-gatherers were the first to use the coastal area and that over time these groups and other more recent immigrants (Moratto 1984) shifted to an increasingly sedentary maritime lifeway. However, generalizing about settlement patterns both synchronically and diachronically is extremely difficult. Questions such as: "how permanent were the settlements?; how were the communities organized?; how large were the resource areas of coastal communities?; and how did they relate to inland areas?;" have not been resolved and are at the heart of current debate over the interpretation of archaeological sites in the Los Angeles Basin. For example, Most of the investigations in the Alamitos Bay area have documented intact remains dating to the Late period (Matthew Boxt, personal communication 1994). This is in stark contrast to the Ballona Lagoon to the north, where most of the sites date to the Intermediate or Middle period (Altschul et al. 1992; Grenda et al. 1994a). Around Bolsa Chica, immediately south of Alamitos Bay, most of the sites date to the Middle period (Mason 1987). Yet, most of the habitations in the next inlet south, Newport Bay, date to the Late

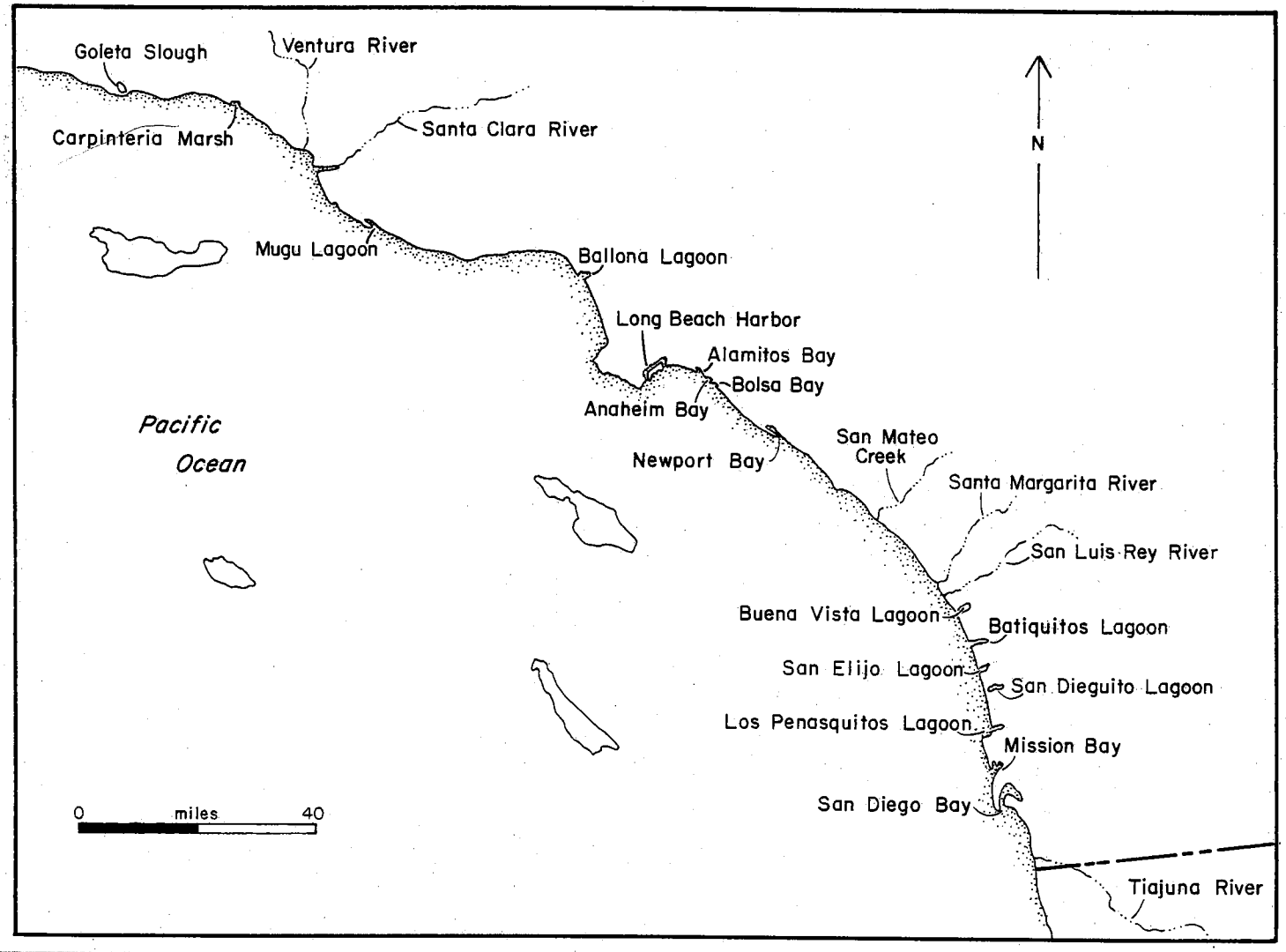

Figure 7.1. Map of lagoons and estuaries along the southern California Bight.

period (Mason 1991). Do these results reflect the paucity of archaeological investigation or do they indicate that wholesale movement of groups from one lagoon to another characterized much of prehistory?

Before addressing these questions a terminological caveat must be raised. When an archaeological deposit can be identified with an ethnohistoric site, there is a general tendency to interpret the archaeological site as a "village," regardless of its constituent nature. As Raab (1993a) points out, the tyranny of the ethnographic record leads to tautological arguments; an archaeological site is a village because it is identified in the ethnohistoric records, and the material culture of a protohistoric village can be inferred from the remains found at that particular site. No independent means of verification is needed.

As used in southern California archaeology, the term village refers to a particular type of habitation. Villages are occupied year-round, have time depth of at least one generation, and house multiple familial units. Villages can be identified archaeologically by features such as house floors and formal cemeteries; by a diverse material culture indicative of domestic activities; by economic data (e.g., pollen and fauna) that argue for year-round occupancy; and markers of status and differentials in wealth. The exact mix of archaeological indicators need not be the same at each identified "village," but all must share some of these attributes.

Recently, several archaeologists have noted that sites identified as Protohistoric villages do not contain these attributes (Dillon and Boxt 1989; Raab 1993a). An even more troubling discrepancy is that certain areas do not conform to the ethnographic model. For example, after over a decade of intense archaeological scrutiny in the Ballona wetlands near Marina del Rey, there is little evidence of permanent habitation, and no evidence for a major village. Altschul and Ciolek-Torrello (1990) point out the apparent inconsistency between the ethnographic model and the archaeological data and forward two possible explanations. First, a village existed, but has not been found or adequately documented among the recorded sites. Always a possibility, the search for new data should not be discounted. But a second possibility is that permanency may never have characterized the occupation of the Ballona. They note that the second explanation would require reanalyzing the relationship between coastal settlement and social organization. Recently, Grenda and Altschul (1994a) explored the theoretical propositions of this second position as it applies to the Ballona Lagoon. These propositions are particularly relevant to our study of Alamitos Bay, where archaeological evidence again is lacking for permanent habitation. In order to establish an intellectual context for the development of our model, hunter-gatherer theory and previous archaeological research in the region is outlined. Our model is also prefaced by a discussion of both the local environment and the cultural mechanisms employed to cope with environmental variability.

Environmental Considerations

The *Povuu'nga*-Alamitos Mesa is located at the mouth of the San Gabriel River, above Alamitos Bay, on the Pacific coast. The most important aspects of this environment are climate, rainfall, and hydrology. Climate has varied considerably in the region since the onset of the Holocene and thus has had various impacts on local populations. Currently, most investigators agree that the Holocene was characterized by alternating episodes of cool/moist and warm/dry climates, with the driest period occurring between 8,000 and 3,000 B.P. (Wilcoxon et al. 1982). Since then, a cooler and wetter period has dominated. These climatic shifts were important to the distribution of flora and fauna and had important effects upon prehistoric populations. Today southern California's climate is classified as Mediterranean, that is, one characterized by two seasons, a temperate wet winter and a moderate dry summer.

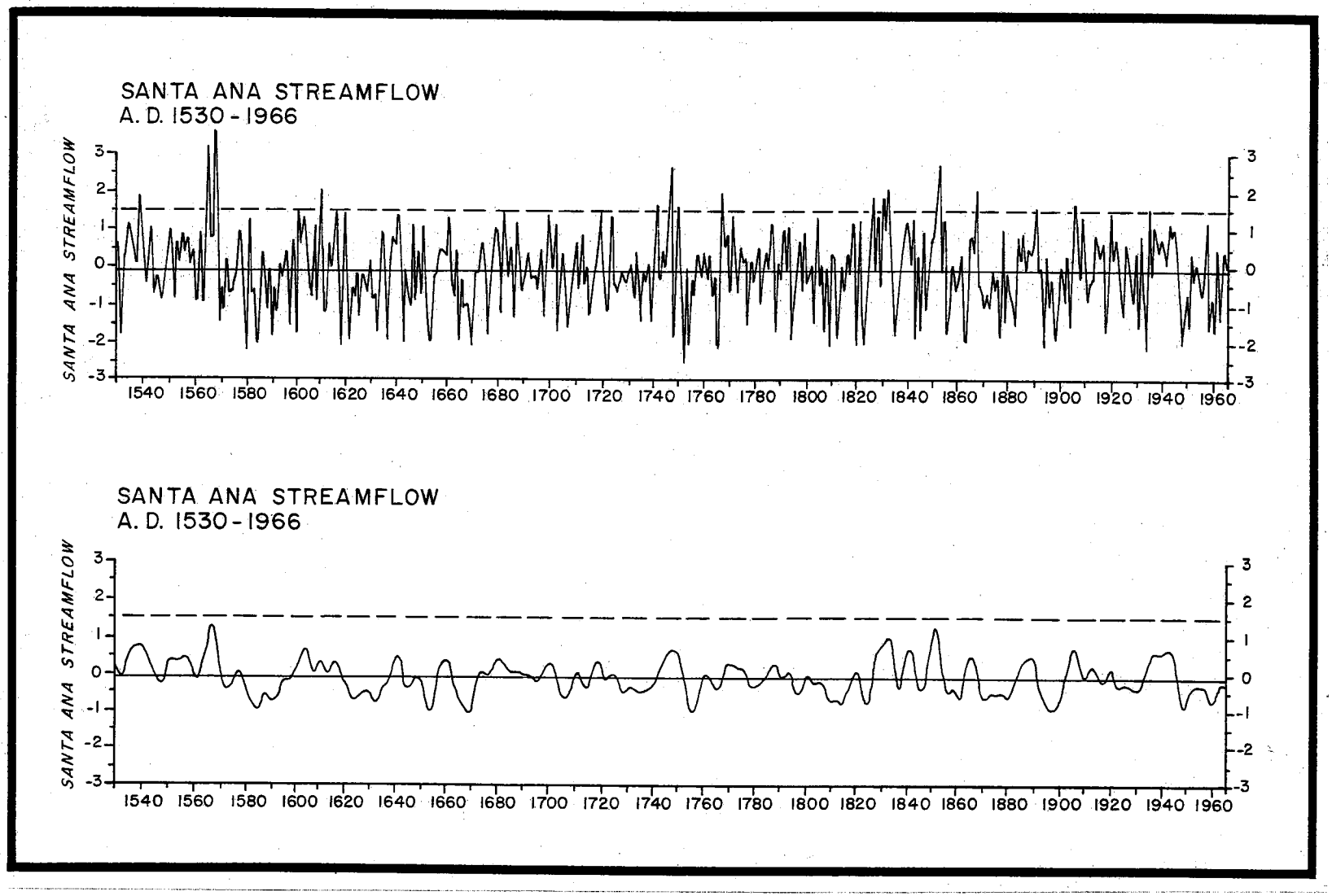

Figure 7.2. Plot of high and low frequency streamflow runoff measures (standard normal variants) for the Santa Ana River between A.D. 1530 and 1966 (from Shaw and Homburg 1992, Figure 119).

An important property of the climate is that precipitation and associated floods and droughts are highly unpredictable from one year to the next. This property is shown graphically (Figure 7.2) in a streamflow reconstruction of the Santa Ana River from A.D. 1520 to 1966 by Shaw and Homburg (1992). It is not uncommon for the area to receive a small fraction of the annual rainfall, resulting in disastrous droughts. Conversely, the annual average rainfall can be greatly exceeded during some years, resulting in the destructive flooding of the rivers. The major rivers of the Los Angeles Basin (Los Angeles, San Gabriel, and Santa Ana) also have a long history of wandering across the plain during flood episodes (Mason 1991; Shaw and Homburg 1992). The San Gabriel River, which currently flows into Alamitos Bay, through the Alamitos Gap, normally has a relatively low discharge but is known to have been captured by the larger Los Angeles and Santa Ana rivers (Poland et al. 1956). Radical shifts in precipitation and hydrologic patterns, therefore, characterize the Los Angeles Basin. These shifts exert a strong influence on the flora and fauna, and consequently on human adaptation at the mouths of the rivers. These floods and droughts create an unpredictable resource base in the estuaries present at the river mouths.

Although the productivity of estuaries in the Los Angeles Basin is unpredictable, estuarine environments are generally among the most productive ecological zones in the world (Dyer 1973; Jones and Wolff 1980; Kennish 1986; Ketchum 1983; Knox 1986). These areas combine oceanic, freshwater, and terrestrial resources in a compact area. Estuaries, however, are ever-changing. High resolution changes in sediment load, sea level sea temperature, saline content, and precipitation are constantly at work altering the ecological balance and consequently changing the resource base. The system follows a chaotic trajectory; that is, it is impossible to predict its future state based on past conditions (Rasband 1990). Moreover, because of the intricate network of microenvironments and natural populations, the balance between predator and host is delicate, easily leading to overexploitation. Although estuaries tend to recover quickly (Antony Orme, personal communication, 1992), overexploitation requires periodic abandonment of areas. Human adaptation to coastal zones, then, has to account not only for chaotic changes in resources due to natural events, but also develop mechanisms to insure resource availability.

Two major conclusions can be drawn from the environmental background regarding human habitation of the Alamitos Bay. First, the area is more conducive to a diversified subsistence economy than to a specialized one. No one resource or set of resources is so abundant and reliable that a successful adaptation could depend exclusively on them in the long term. Floral resources were likely of equal if not greater importance than the fauna of the region. Marine and terrestrial animals probably supplied protein, but the population likely received the bulk of their calories from vegetable resources (Glassow and Wilcoxon 1988). Second, the archaeological record in the area is a biased representation of prehistoric settlement patterns. Rising sea levels have inundated early sites along the coast (Carbone 1991). Further, many early sites along water courses have been destroyed or buried from flood waters and sediments. Flood episodes have biased the discovery of sites to the higher river terraces and mountain tops. Thus, sites are visible primarily on older, more stable, land surfaces. These environmental factors required specific adaptive responses from the local human population.

Hunter-Gatherer Coastal Adaptation

Hunter-gatherers on the southern coast employed a wide range of buffering mechanisms to minimize the effects of environmental scarcity and variability common to the region. These buffering mechanisms are divided into four categories: mobility, diversification, storage, and exchange (Halstead and O'Shea 1989). Throughout prehistory different combinations of these strategies were employed to reduce the risks involved with living in an unpredictable environment. In a previous paper, we (Grenda and Altschul 1994a) discuss these mechanisms in relation to cultural evolution in the Ballona Lagoon. We argue that the most common strategy to combat temporal and spatial resource variability is

mobility. Simply put, when the resources of an area are exhausted, people move on. This strategy works well when there is ample land, and this appears to have been the case for most of prehistory along the southern coast.

During the Early period, populations were low enough that flexible territorial boundaries and extensive kin networks provided hunter-gatherers faced with scarce resources the opportunity to move to another location where resources were abundant. As coastal and interior populations increased, the strain on resources rose. There are three other recorded Gabrielino settlements within 10 miles of *Povuu'nga* (McCawley, this report). Ethnohistoric evidence indicates that circumscription and reduced access to resources often led to warfare between inland and coastal groups. Differing degrees of circumscription may also have been one factor in the decision to establish settlements in some lagoons and not others.

Ethnographers claim that the Gabrielino had established permanent villages at most, if not all, lagoons along the southern California Bight (Bean and Smith 1978). If so, the permanent villages of the Gabrielinos mark a dramatic shift in indigenous coastal settlement. The causes for this shift are probably many and complex. Chief among them is population growth. Larson and his collegues (Larson et al. 1993) have shown that the number of sites in the Luiseno area increases dramatically during the Late period, and similar observations have been made by Glassow and Wilcoxon (1988) in the Santa Barbara region.

But how large a population increase occurred, and could it have taken place naturally or were people migrating toward the coast? Tainter (1977) discusses an approximate population growth rate of 0.08 percent in the Santa Barbara coastal region between A.D. 500 and 1500. Let's assume that the population of the Los Angeles Basin at A.D. 500 was 1,000 people, or about 0.67 people/square mile. This figure seems reasonable given that Steward (1955) argued that band level populations in the Great Basin averaged around 1 person/square mile. At a .1 percent growth rate the population would have grown to 2,700 people by A.D. 1500; a 0.2 percent growth rate over this period would have left about 7,400 people. To arrive at Kroeber's (1925) estimate of 5,000 people for the pre-contact Gabrielino population, a 0.16 percent growth rate would be necessary.

Although population growth is not an inherent cultural tendency, Hassan (1976) and Cowgill (1975) have argued that formative societies can sustain growth rates in the range of 0.1 to 0.2 percent over a period of a millenium. Thus, it is possible given the technological advances in fishing technology and watercraft that took place at the onset of the Late period for the population growth reflected in the archaeological record to be internally driven.

In addition to possible internal drives, however, two major external factors had an effect on population levels in southern California. Probably the most recognized external factor that had an effect on population growth is the Shoshonean incursion (Drover and Spain 1972; Koerper 1979; Kroeber 1925; Moratto 1984; Rice and Cottrell 1976; Wallace 1962; Warren 1968). Although an ongoing debate exists concerning the nature and timing of this intrusion, it is relatively clear that people were entering the south coastal area from the desert regions. In addition to the desert peoples moving toward the coast, recent archaeological evidence suggests that around A.D. 1150 to 1300 populations may have moved from the Channel Islands to the coast. Arnold (1991) argues that an extended El Nino period between A.D. 1150 and 1250 led to an increase in sea surface temperature and a reduction in Santa Barbara Channel resources. The reduction in resources led to a reduced use of the islands, an increased dependence of island populations on mainland resources, and eventually to the control of cross-channel trade and the rise in complexity. Both of these external factors could have led to an increase in south coastal populations. Factoring in these external drives means that a much smaller internal growth rate was necessary to achieve Kroeber's (1925) estimate.

As population grew, settlement became increasingly aggregated in coastal positions. Aggregation limits mobility. As the ability to move freely along the coast decreased, Late prehistoric hunter-gatherers turned to the three other adaptive mechanisms to insure survival. Diversification probably increased to reduce some of the stress. Diversification took the form of two distinct but related strategies. Groups expanded the resource base that was exploited within an area by defining new resources and/or technologies, or increased the exploited area to include more resources. McCawley (this report) estimates that each Gabrielino community in the Long Beach area controlled an area of about 30 square miles. We suspect that these areas were irregular in shape, with a small "neck" near the coast opening into a much larger inland "head" which encompassed riparian, chaparral, and montane ecological zones. Gabrielino diversification likely included the addition of acorns from less desirable oak species and perhaps the inclusion of additional insects and rodents. Geographic diversification was, however, limited by nearby populations and was probably another factor contributing to warfare.

In those areas where mobility and geographic diversification became restricted, trade offered decided advantages. Access to trade networks provides a buffer to environmental variability by allowing goods from productive regions to enter the area in exchange either for goods or social needs (e.g., information). The Gabrielino maintained economic and ritual trade networks with the Channel Islands, and others groups including the Cahuilla, Serrano, Luiseno, Chumash, and Mohave. The Gabrielino also developed a market system enhanced with rituals to guard against shortages. According to McCawley (this report), this system was based on the laws of supply and demand, was driven by individual profit motive, and had five important features. First, trade served to keep goods in circulation. Second, it allowed people to trade nonfood items, such as obsidian or furs, for food. Third, the system promoted the development of craft specialists. Fourth, increased trade stimulated the demand for a medium of exchange (i.e., shell money). Fifth, a number of aspects of the economy, including trade, were under the direct control of the *tomyaar* or chief. The *tomyaar* also controlled the community food reserves which were generated through a deposit of a portion of each hunter's or fishermen's take. His/her position was reinforced through rituals that prevented the consumption of one's own kill.

Storage enhances the trading network's value. In the absence of storage facilities or the ability to store value, trading must be maintained on a regular basis. With the exception of acorns, no resource capable of sustaining groups for any length of time appears to have been suitable for long-term storage. The inability to physically store food stuffs may have encouraged the development of stored value in the form of shell money. In addition, the importance of shell money to solidify and reify alliance and marriage patterns is well documented among ethnographic groups throughout southern California (Gifford 1947). The ability to "bank" obligations through reciprocal rituals had the dual effect of insuring that resources could be made available in the case of famine at the same time enhancing the power of the leaders who maintained the insurance by holding shell money and other ritual items. As social networks became increasingly tied to the economic success of each community, the power of leaders increased and the social structure was reified.

During the Late period in the Alamitos Bay, then, there is evidence for increasing population, decreasing mobility, resource specialization, and for exchange with outside groups. These conditions occurred within particular environmental settings. We argue that the interdigitation between the social and environmental parameters led to a peculiar settlement system.

Previous Research

Over the past 25 years, a number of models have been developed to help explain the archaeological record of hunter-gatherers on the southern California coast. This section briefly reviews

the development of hunter-gatherer theory and the models developed for the California coast as they apply to the Alamitos Bay region. Models specifically designed to explain the archaeological record of the *Povuu'nga*-Alamitos Mesa area are critically examined. These reviews serve as a background for the development of our model of settlement and complexity in the Los Angeles Basin.

A History of Hunter-Gatherer Studies

Until the mid 1960s, it was commonly held that the lives of hunter-gatherers were "nasty, brutish, and short." This view was seriously challenged by a series of ethnographic studies of the San of the Kalahari Desert (e.g., Lee 1968, 1969, 1976). The argument, presented by Lee (1968) and others at the influential *Man the Hunter* conference, suggested that the San were representatives of early foragers, who satisfy their needs with relative ease and had, until recently, remained isolated from outside influence (Lee 1965, 1968, 1969, 1972; Marshall 1961; Sahlins 1968, 1972). From this it was argued that modern hunter-gatherers could provide important insights into the course of human evolution (Bird-David 1992) and prehistoric behavior. The view of the forager as extremely adaptable, and "in balance with nature" meant that most of these studies focused on questions concerning the limitations of the environment and how technology helps to mediate such limitations. Research during this period also reflects the belief that if environmental and technological variables could be controlled, then so could variation in social form (Keene 1991). Finally, a cultural evolutionary view point was built into all of these studies.

During the 1980s this "traditional" view came under fire from "revisionist" researchers disturbed by evidence suggesting that these groups often interacted with neighboring populations, participated in modes of production other than hunting and gathering, and played an active role in the world economic system (Schrire 1980, 1984; Wilmsen 1983, 1989; Wilmsen and Denbow 1990). Working with data gathered in modern groups, archaeologists began to construct models to address questions such as the origins of agriculture, the sources of variability in the record, and the rise of complexity (e.g., Bailey 1983; Price and Brown 1985). Variability was the key to many researchers; each culture appeared to have been shaped by its own particular environment, history, and interactions with outside groups, leading many anthropologists to become skeptical of ethnographic models projected into the past (Denbow 1984; Gordon 1984; Parkington 1984; Schrire 1980; Wilmsen 1983, 1989; Wilmsen and Denbow 1990). Drawing on world-systems models of Wallerstein (1974) and Wolf (1982), this movement criticized the work of Lee and others (e.g., Lee and DeVore 1968). Even though this revisionist movement dealt a serious blow to the San model, many archaeologists (Eder 1987; Griffin 1985; Solway and Lee 1990; Yellen 1990) continue to argue for its applicability (Headland and Reid 1991).

Presently it appears that extreme views are oversimplifications of a number of complex issues (Barnard 1990; Cashdan 1989). It is clear that many foraging cultures do not fit the San model (Price and Brown 1985), and as a result, variability in hunter-gatherer groups is currently the focus of much research (Kent 1992). In addition, it is now generally accepted that each foraging group has its own history and a different degree of interaction with the outside world (Wilmsen 1989). It is important to remember, however, that interaction is not necessarily synonomous with domination and exploitation (Patterson 1990; Solway and Lee 1990). These ideas are critical to discussions of the rise of complexity in southern California. Some scholars assume that because native populations were missionized they are poor analogs for prehistory. Whereas missionization was certainly a major factor in the history of local populations, this should not automatically discount the use of this source of data. Careful use of Mission records (Earle, this volume) and ethnohistoric data (McCawley, this volume) is required and must be viewed within the context of the larger world-system.

Interaction Studies

A discussion of the world-systems theory dicotomy between the "core" and "periphery" provides a background for our view of both intra- and inter-settlement interactions. Although originally developed to explain the rise of Capitalism (Wallerstein 1974, 1980, 1988), some scholars have argued that world-systems theory is applicable to much earlier time periods and that the scale of analysis is appropriate for all systems (Frank and Gills 1992; Gills and Frank 1990; Schortman and Urban 1992). The most important aspects of the theory for the construction of our model are that it highlights: (1) to understand the system, one must study the entire system as a whole; (2) although the system may have politically independent parts, they are all economically dependent; (3) the world-system is composed of core and periphery areas; and (4) the structure of the system is the product of specific historical events (Bergeson 1980; Roseberry 1989; Smith 1983).

Wallerstein's point of view has made a major impact on the manner in which archaeologists analyze prehistoric economies (Kohl 1987; Schortman and Urban 1987). Kohl (1987) argues that Wallerstein's theory only imperfectly describes economic interactions in prehistory. Others (e.g., Winslow 1991) argue that the model is too general and descriptive to explain and predict household and regional processes. Winslow's criticism is especially important when it is applied to prehistory. Most prehistorians spend their research time attempting to understand local and regional processes visible in the archaeological record. Until these local conditions are understood it is difficult to incorporate outside influences on the system.

The major strength of interacteraction models rests in their unit of analysis. Prior to the development of world-systems theory, anthropologists were content with examining social systems on a household or regional scale. These ideas were a reaction against isolationist models constructed during the 1960s. It is now argued that the level of analysis necessarily leads to an emphasis of particular facets of the system (Frank and Gills 1992). Whereas single state analyses tend to emphasize production and endogenous factors, world-systems analyses focus on accumulation, exchange, and hegemony. The appropriate level of analysis is still unresolved, but it is clear that outside influence has played a role in most systems, including the development of complex hunter-gatherers on the southern California coast.

Thoughts on the Rise of Complexity

Most early studies of the development of chiefdoms and other stratified societies with concentrated power focused on the classification and organization of these groups (Fried 1967; Sahlins 1958, 1972; Service 1962; Spencer 1967; Steward 1955). With few exceptions (e.g., Childe 1936, 1942), most of these early researchers found the causes of change to be in access to resources and production (Fried 1967; Steward and Faron 1959). Many also tied the emergence of complexity to the appearance of agriculture and sedentism, an idea that some still embrace (e.g., Paynter 1989) even with overwhelming evidence to the contrary (Arnold 1992; Bender 1990; Brown 1985; Hayden et al. 1985).

The study of cultural complexity has recently generated considerable methodological and theoretical debate (Arnold 1993; Carneiro 1981; Earle 1991; Johnson and Earle 1987; Price and Brown 1985; Renfrew and Cherry 1986; Upham 1990; Webster 1990; Zeidler 1987). At the center of the controversy are questions concerning the reasons for cultural evolution. Following Johnson and Earle (1987), our definition of the term "complex" refers to systems with chiefdom-like organization. A chiefdom (often divided into simple and complex based primarily on the size of the integrated population) is defined by at least four characteristics: hereditary inequality, a population in the

thousands, economic stratification, and power based on control of trade, production, ideology, and/or conquest (Arnold 1993; Carneiro 1981; Earle 1987, 1991).

Different approaches to the study of the origins of complexity have been forwarded and classified a number of ways. According to Gould (1985), "adaptationalists" stress the importance of the environment and other external factors that call for economic management (Rathje 1972; Sahlins 1958; Sanders and Price 1968; Service 1975; Wittfogel 1957), while "transformationalists" emphasize the role of internal factors such as aspiring elites or others with the ability to change the cultural organization of the system (D'Altroy and Earle 1985; Friedman and Rowlands 1977; Shennan 1982). These two approaches, plus the "commercial" models of Frank (1969), Wallerstein (1974), and Wolf (1982), have also been discussed by Brumfiel and Earle (1987). Recently, Arnold (1993) classified the approaches into four schools based on the proposed stimuli to change. The "population growth" school focuses on complexity as an outcome of population increases. The "political evolution" school highlights internal actions taken by individuals or groups. The "environmental stress/risk management" school emphasizes stresses that have an effect on subsistence. The "warfare" school views threats from external groups as the impetus for change. These different schools are evident in models of settlement and complexity developed for southern California. Our model, developed below, employs aspects from all four schools.

MODELS OF SOUTHERN CALIFORNIA COASTAL SETTLEMENT AND COMPLEXITY

Some of the early settlement models developed for southern California (e.g., Chase 1969; Hudson 1969, 1971; Ross 1969) reflect the concepts outlined by Lee (1968) and support the idea of seasonal subsistence patterns. These models postulate that groups relied on coastal resources during fall and winter months and moved inland during spring and summer. Other early models (e.g., Drover 1974; Hafner 1971; Howard 1977; Rice and Cottrell 1976; True and Waugh 1982) argue for permanency on the coast during the Late period or even earlier (see Curtis 1965; King 1967). Koerper (1981) argues for a shift from winter use of the coast during the seventh millenium B.P. to a central based wandering settlement system during the later Milling Stone period. Differences in interpretation primarily depend on seasonality data gathered during fieldwork.

Kelly (1992) has recently pointed out the need to construct better models of mobility and sedentism. He claims that a simple polarization of sedentism and mobility is not a useful concept. All societies, including modern industrial states, have populations that move. The dimensions of movement in relation to behavior and culture are what need to be studied. A number of scholars have responded to this call by constructing models dealing with settlement patterns, interaction spheres and the rise of complexity in the south coastal region (Arnold 1987, 1990, 1991, 1992a, 1992b, 1993; Grenda and Altschul 1994a, 1994b; Grenda et al. 1994; Raab 1993b). These researchers are analyzing the relationships between the environment, population dynamics, human adaptability, and social systems.

Previous Settlement Models for Alamitos Bay

The issue of Protohistoric coastal settlement has implications beyond academic interests in human adaptation. The controversy surrounding *Povuu'nga* in large part can be traced to different notions about Gabrielino settlement practices. On the basis of ethnographic informants, J.P. Harrington identified an area on the Alamitos ranch as "the remains of the rancheria of *Puvu*, birthplace of *Wuyoot*

and [Chingichngish]" (in Boscana 1933:152). Dixon (1972) later identified this site as CA-LAN-306, the Bixby Ranch site.

Although Harrington described *Puvu* as a rancheria, Dixon utilized the term village in referring to *Povuu'nga*. Dixon, however, appears to use the two terms interchangeably, as suggested in the following passage.

> It is probably safe to identify the legendary and historic site of Povuu'nga with the actual midden which is visible at Rancho Los Alamitos. True, these remnants are not very impressive, and nothing now remains visible that would indicate the presence of a large or important village that was inhabited for centuries by hundreds of people. But it must be remembered that a named village in prehistoric times would have had a tendency to move around gradually over time, as the garbage grew unbearable or for other causes.
>
> Puvunga was probably at one particular spot only intermittently, and we should perhaps consider the name to apply to a small region. In previous surveys on and around the hill I found and recorded nine sites (LAn-232 through 235, 271, 273 through 275, and 306). If it had not been for loss through construction activity more sites could have been found. What the archaeologist (in his ignorance) might identify as a number of "separate" sites may well have been a succession of Puvungas (Dixon 1972:88).

These statements by Dixon hint at his model of settlement for the *Povuu'nga*-Alamitos Mesa. His model was constructed to explain the relationship between a series of archaeological sites he recorded in the early 1960s around the California State University at Long Beach (CSULB) campus. The construction of the model roughly coincided with Dixon's intent to nominate seven sites (CA-LAN-233, -234, -235, -271, -273, -275, -306) to the National Register of Historic Places (NRHP). However, due to property ownership and other legalities, only three sites (CA-LAN-234, -235, -306) were successfully nominated (Dixon 1974).

Dixon's (1972) view is of a single village that physically changes location periodically. In essence, Dixon argues that the Gabrielino model of permanent villages applies to the Alamitos Bay. Villages are small and frequently move. This type of settlement system would leave a distinctive pattern in the archaeological record. Village sites should be mirror images of each other. Each should contain evidence of a similar sized population, with similar layouts and patterns of intrasite variability in terms of wealth and status. All should contain evidence of permanent occupation or planning depth as discussed by Raab (1993a).

In 1979, Whitney-Desautels advanced the hypothesis that sites below the 25 foot contour are either natural deposits or have been redeposited through mechanical means (Desautels and Whitney-Desautels 1979). Her ideas were based on a geological assessment of the region and archaeological investigations of portions of CA-LAN-235, -1003, and -1004. She corroborates her ideas by citing Carter and Neitzel (1977) who dug *near* CA-LAN-705, found minimal artifacts, and concluded that the sparse artifacts represented redeposited material.

In 1980, Scientific Resource Surveys (SRS) further tested Whitney-Desautels' hypothesis through the archaeological testing of CA-LAN-235 (Japanese garden area). In this report SRS points out that sites CA-LAN-234, -235, -271, -275, and -306 are either entirely located above the 25 foot contour or have portions above that elevation. These areas are argued to be intact deposits. Based on previous excavations (Carter and Neitzel 1977; Whitney-Desautels 1979), CA-LAN-705, -1003, and -1004 are argued to be redeposited. Citing these observations and their negative results in the Japanese garden area of CA-LAN-235, SRS then predicts that sites CA-LAN-1000, -1001, -1002, -1005, and -1006 are

redeposited. The authors (SRS 1980) discount site CA-LAN-702, which is located below the 25 foot contour. Although not explained, the authors claim (SRS 1980:16) the deposits represent a "possible later site," and does not contradict their model.

In 1981, Dixon and Rosenthal reviewed the SRS (1980) report. Criticisms were leveled at the geological assessment of the area, SRS' interpretations of CA-LAN-705, their omission of key sites and references in the area (especially Bates 1972), and their incorrect use of site CA-LAN-702 in their model. Although subsequent letter responses were sent to the CSULB administration (Desautels 1981; Dixon 1982), further archaeological investigations by SRS (Clay et al. 1986) chose to ignore the review.

In 1986, Clay et al. investigated portions of CA-LAN-235 located between the 16 and 21 foot contours. They concluded that materials found during testing were redeposited. Whitney-Desautels' (Desautels and Whitney-Desautels 1979) hypothesis was again stated but with the addition of site file data to further substantiate the developing model. Clay et al. (1986) found 27 sites within a 1.6 kilometer radius of the site (roughly equivalent to the *Povuu'nga* land mass). Of these 27 sites, 18 are located above the 25 foot contour and are claimed to be aboriginal deposits. The remaining 9 sites are located below 25 feet and are predicted to be either natural shell or mechanically redeposited. They argue that negative results at sites CA-LAN-1003, -1004, and the tested portion of site CA-LAN-705 corroborate the model. Negative results on the tested portions of CA-LAN-1002 are used in a later report to further strengthen the model (Whitney-Desautels et al. 1993).

A number of problems are evident with Whitney-Desautels' (Desautels and Whitney-Desautels 1979; SRS 1980) predictive model. A number of criticisms were discussed by Dixon and Rosenthal (1981) shortly after the submission of the report. Two criticisms relating directly to the model are: (1) the erroneous interpretations of the archaeology and geology in the region; and (2) the misrepresentation and/or omission of significant excavation data and relevant publications. Additional criticism of the model, as developed in later SRS reports (Clay et al. 1986; Whitney-Desautels et al. 1993), now includes the failure to address the oversights of their previous observations. Later reports fail to consider other sites in the region that contradict the model. The designation of site CA-LAN-702 as a "later site" contradicts the model in the same way it would if it was an early site. An explanation should be offered for the site's existence. Their use of site CA-LAN-705 should also be reevaluated; the report by Carter and Neitzel (1977) clearly states that they did not excavate on the site, but rather they tested a small shell deposit near the site. As a result, claiming CA-LAN-705 is redeposited material is incorrect; the data necessary to make that determination were not available at the time of the report. Recent excavations have shown that CA-LAN-705 is an intact deposit (Matthew Boxt, personal communication 1994). The model as it is outlined fails to withstand even minor criticism. An additional blow to the model is the existence of sites CA-LAN-270, and -702, which demonstrate that sites exist in the area below the 25 foot contour. Finally, additional excavations on the California State University at Long Beach campus have documented intact deposits below the 25 foot contour line. Some of these sites were previously tested by SRS and argued to be redeposited (Matthew Boxt, personal communication 1994).

Although the models developed by Dixon (1972, 1974) and Whitney-Desautels (Desautels and Whitney-Desautels 1979; Whitney-Desautels et al. 1993) are relatively simplistic, they provide hypotheses that are testable through archaeological investigation. Dixon's model offers a description of *Povuu'nga*. According to the model, the village site changed location over time and thus the whole mesa should be considered *Povuu'nga*. In contrast, Whitney-Desautels' model (Whitney-Desautels 1979; Whitney-Desautels et al. 1993) offers a testable hypothesis concerning site location within the Alamitos Bay region. Sites below 25 feet are argued to be either redeposited or natural deposits. This model has been tested and found to be an inadequate predictor of site location (Matthew Boxt, personal communication 1994). Our model is concerned with aspects of both of these models as well as with the rise of complexity and socioeconomic interactions.

Settlement in a Chaotic Environment

The study of nonlinear systems such as weather and turbulence has been revolutionized by the science of chaos (Gleick 1987). Chaos theory demonstrates that nonlinear systems are extremely sensitive to initial conditions and that predictions, even moderately far into the future, are impossible (Rasband 1990). Most social scientists recognize long-term phenomena concerning world processes are unpredictable, but many argue that short-term processes approximate a normal distribution (Park 1992). It is from these distributions that some scientists claim individuals make decisions concerning risk (Dean 1988).

Altschul et al. (1992) argue that unlike other coastal lagoons it is possible that the Ballona Lagoon was never permanently occupied. They suggest one possible explanation for the absence of a permanent village site is that the environment may have been perceived as too risky. Based on a streamflow reconstruction for the Santa Ana River covering the period A.D. 1520 to 1966 (Shaw and Homburg 1992), they predict that the Ballona Lagoon was flushed out, on average, every 84 years. But the average is of little use. Major floods occurred within several years of each other as well as being separated by over a hundred years (see Figure 7.2). In addition, in the Los Angeles Basin, flooding frequently causes rivers to change course. Streamflow is thus highly variable, following a classic "chaotic" pattern. It is out of this chaos that long-term adaptive strategies evolved.

Weather systems and related streamflows are currently viewed as chaotic at any point beyond the immediate short-term (Lorenz 1963; Pastiaux et al. 1987). Annual means can be calculated, but the period and amplitude of these cycles are chaotic. This information leads to a situation where knowing the range of floods fails to allow a prediction of any future flood level, beyond the fact that it will likely fall within an expected range. Past years provide no basis for predicting future years. As a result, inhabitants of flood zones such as the Alamitos Bay could not have assigned risks to different potential areas for settlement. Certainly they would have known that higher ground was less likely to flood, but a risk schedule for lower land could not have been constructed. These facts had a profound impact on settlement patterns.

Because populations were unable to assign risks to living in different areas of the estuary, it would be a poor strategy to establish a single village site anywhere in the flood zone. A much less risky strategy would be to establish a series of smaller but connected sites around the estuary. This type of settlement system was described by the Spanish as a rancheria. During periods of minimal environmental problems the entire community can remain within the estuary and function as a single social unit without placing significant stress on the natural or cultural systems. During floods and droughts, however, portions of the population would have to be sloughed off to forage in other areas. This raises the question of which portion of the population would leave the rancheria. Our model suggests that the sociopolitical structure of the group determined which groups stayed and which were sent out to forage.

Although the estuary was probably viewed as common property, it is likely that the leaders of the settlement had first access to land. However, because the best land from an economic aspect is impossible to determine, they would likely have chosen the land that appeared to be most stable. This core area probably settled over time due to a number of factors such as landform changes within the estuary, resource availability, or site specific problems such as waste disposal (cf. Dixon 1972). Members of the oldest lineage and other "middle class" inhabitants probably had access to the next best land and the rest of the population likely spread out around the periphery of the settlement area. The ethnographic record alludes to these types of land divisions. Chiefs typically lived near the *yovaar* or sacred area and other community structures (Bean and Smith 1978; McCawley this report). These areas were located on the most stable land above the estuary.

The core area was likely on relatively stable ground, however, the exact location would have varied over time. Without an accurate knowledge of the number of times the San Gabriel and other rivers changed course or were captured by other rivers, the location of the site is difficult to predict. However, because it is likely that the elite had some control over the distribution of food it was probably less critical to be near the food resources of the estuary. The site was more likely located near a reliable water supply.

We expect the core area of the rancheria to contain a number of attributes associated with the elite portion of the population. The core should display a wide range of artifacts (including exotics) and activity areas, and show evidence of ritual behavior. We expect the core area to have identifiable features such as house floors and larger community structure remains. This area of the site should have a relatively permanent population living at the site on a year-round basis. Cemeteries are expected and should contain evidence of ascribed status and differentials in wealth. Different sites that fit this description should be similar in size and layout. Raab and Boxt (1994) argue the site should contain evidence of "planning depth" and also suggest that Galdikas-Brindamour's (1970:130-131) laundry list of village site attributes may be helpful in identifying villages. Whereas we agree that the core area of the rancheria should show planning depth, the list of attributes suggested by Galdikas-Brindamour (1970) may not be entirely applicable to the core area; the traits may, however, apply to the rancheria as a whole.

The layout of the core area as discussed by McCawley (this volume), suggests that a semiperiphery existed within the rancheria. This portion of the rancheria is expected to consist of living areas representative of the middle class or oldest lineage portion of the population. The locations of these sites are expected to be located between the core area and the surrounding periphery. Sites should resemble the core with the exception of ceremonial areas. Artifacts are predicted to represent primarily domestic activities. Burials may be present at these sites, but should not appear to be members of the elite. Important "middle class" residents of these sites were likely buried within the formal cemetery of the core and would probably appear to be members of the elite.

The periphery of the rancheria would consist of a series of unconnected sites that display evidence of more limited activities. These sites are predicted to be scattered across the less stable land nearer the food resources present within and around the estuary. Depending on the frequency of short-term flood episodes, the stability of the specific landform, and the nature of the site, some peripheral deposits may display considerable time depth. Other short-term resource procurement sites may consist of a minimal number of artifacts and represent only a few hours of use.

Living areas should be present at some periphery sites and burials may be found. However, formal cemeteries and evidence of ritual behavior is not expected to be found in these areas. Burials are predicted to have few, if any, associated grave goods, indicative of a lower socioeconomic status portion of the population. The majority of periphery sites should take the form of specialized activity sites such as resource procurement locales and display considerably less planning depth.

Viewed over the long-term, settlement trends in Alamitos Bay are relatively simple. Around 5,000 to 6,000 B.P., the area began to be used on a short-term basis throughout the year by small hunting and gathering groups that came to exploit the abundant resources. The open, unsheltered bay was subject to seasonal fluctuations in resource availability that led to sporadic use of the area. The early pattern approximated a seasonal round with groups moving between inland and coastal areas. As populations increased during the Late period (see Breschini et al. 1992), we see evidence of increasing use of the wetlands. This pattern continues into the Protohistoric period with the length of occupation increasing at sites around the lagoon-edge in a rancheria type of settlement. This type of settlement continued until 1805 when the area was abandoned due to missionization.

Short-term settlement patterns during the Protohistoric period are not as simple. We argue that the rancheria type of settlement described by the early Spanish explorers and missionaries was extremely complex and very different from commonly described villages (cf. Dixon 1972, 1974; Galdikas-Brindamour 1970). Functionally, a rancheria settlement system can be distinguished from an aggregated village pattern by the manner in which people are distributed over the landscape. The village pattern, which is the model commonly derived from Gabrielino ethnohistory, centralizes decision making in one logistic locale. Although often unstated, power over economic decisions may be one strong impetus toward the development of a stratified society and a centralized village pattern along the southern California coast. In contrast, the rancheria system spread the population over a number of small sites within the estuary. This pattern reduces the risk of loosing an entire settlement to a flood and provides for easy dispersion of settlements during environmental disasters. The unpredictable nature of the environment may also have stimulated social solutions to resource variability. Dividing the land in the wetlands among the group may have led to the social stratification and unequal distribution of wealth also documented by early explorers. In essence, decision making and power may also have been centralized in the rancheria system. Social relationships between groups may have been expressed not so much by position or wealth within a village as by topographic position within the estuary, with the more powerful groups located on the most favored landforms near the best resources.

CONCLUSIONS: HOW THE MODEL EXPLAINS AND PREDICTS THE ARCHAEOLOGICAL RECORD

Based on our model of settlement for the Alamitos Bay region, we can now explain how the existing archaeological data fit into the system and predict the attributes of sites about which little is known. Generally speaking, the area consists of core, semiperiphery, and periphery sites that correlate with the stability of the land during the time of occupancy; core sites located on the most stable land near fresh water and periphery sites on less stable land near the food resources of the estuary. Distinguishing between periphery and semiperiphery sites using only site record forms and minimal additional written reports is extremely difficult. For the puposes of this chapter, we combine the periphery and semiperiphery. As a result we create two categories, core sites and all other deposits.

Core Sites

Based on the ethnographic record, the best candidate for a core site in the Alamitos Bay region is CA-LAN-306. This site was visited by Harrington and described as the site of *Povuu'nga* by his informants (in Boscana 1933). The site is located on very stable ground (Bixby Hill), approximately 75 feet above sea level with an active spring located in the immediate area. However, the site was used as the location for the Rancho Los Alamitos and most of the midden either has historic structures on it or has been destroyed by the surrounding housing developments. Limited test excavations by Zahniser (1974) demonstrated intact deposits, but failed to produce evidence consistent with a core site. Unfortunately these excavations were limited to a small portion of the site in the southeast corner of the Rancho property.

When would it be advantageous to live on such high grounds? To answer this question it is useful to note changes in streamflow prior to the abandonment of *Povuu'nga* in A.D. 1805. Figure 7.2 reveals an extended period of above normal flow with some very large flood episodes between A.D. 1675 and 1805. This unstable period may have forced the occupants of the core to seek highly stable ground, well above the floodplain. Only a few major drought years are present during this sequence. The area

described by Harrington (in Boscana 1933) as the site of *Puvuu'nga* at CA-LAN-306 is located on a hill. It is possible that this site was used as a refuge during highly volatile years.

Based on the available archaeological data, one site in the region, the Los Altos site (CA-LAN-270) appears to represent a core site. This site contains a high diversity of artifacts, including status items such as exotics, beads, effigies, pipes, and decorated steatite bowls, which demonstrates that at least some elite portion of the population inhabited the site. In addition, the presence of at least 21 burials indicates the presence of a formal cemetery (Bates 1972). Whereas most of the burials were adults with associated grave goods, a number of infants were also buried with beads and other status items, probably indicating ascribed status.

In contrast to CA-LAN-306, the Los Altos site is located at an elevation of 17 feet. Although this elevation is probably not entirely above the flood zone, it could have appeared as highly stable ground during extended periods of drought. The period between A.D. 1621 and 1675 could potentially have been a relatively stable period. Streamflow during this period is generally below the calculated mean (Figure 7.2). Prior to and after this time major floods characterize the region. The site is located on a distributary of the San Gabriel River that could have provided a good water supply, but may also have overflowed its banks during flood episodes. Although subject to flooding, it contains the best data for a core site within the Alamitos Bay region.

An alternative to Los Altos being the antecedant to CA-LAN-306 is that the two sites were contemporaneous. McCawley (Chapter 3, this volume) suggests that if two lineages occupied *Puvunga*, then the older would most likely have established its core area around the the Bixby Ranch (CA-LAN-306), with the younger lineage possibly settling closer to the San Gabriel River at the Los Altos site. While we find McCawley's suggestion appealing, we question whether such a vulnerable location would have been chosen as a core site during the latter half of the eighteenth century.

Unfortunately, the site record form for the Los Altos site is of little help. It dates the site between A.D. 1000 and 1400 and Bates (1972) identifies it as a Late Horizon site. However, these dates are based on artifact types found during the excavation, not absolute dates. Enough shell exists from the site to date it without further excavation. Such a procedure would greatly clarify regional protohistoric settlement.

Semiperiphery/Periphery Sites

In theory it is easy to distinguish semiperiphery sites from periphery sites. In practice, these sites produce very similar archaeological deposits, and may in fact be impossible to separate. For this reason, all other recorded sites in the region have the characteristics of semiperiphery/periphery sites and are grouped into this one classification. These sites include those discussed in Chapter 5 and shown in Table 5.4. Six of these sites contained human remains or burials (CA-LAN-131, -235, -272, -830, -1007, and CA-ORA-264), and CA-LAN-830 is reported to have as many as 11,000 beads (Site Record Form). These sites may qualify as semiperiphery sites (as defined above), but until further data are available no determination can be made. These sites would include middle class residential areas and associated economic activity areas.

For classification and discussion purposes, periphery sites include the rest of the small sites in the surrounding region. These sites include those recently excavated on the California State University, Long Beach campus by Matthew Boxt (personal communication, 1994). Periphery sites include residential sites for the lowest status portion of the population, processing sites, and other areas primarily related to economic activities. Sites that represent single-use or isolated artifacts can also be classified as periphery sites. Essentially these sites are viewed as the support system for the core. Most

of the population of the rancheria was spread out around the margin of the estuary and conducted daily economic activities in support of the entire rancheria. It is recognized that a substantial portion of the core population was probably also involved in economic activities around the estuary, however, characterizing these sites as elite-related would be extremely difficult if not impossible.

MODEL SUMMARY

Our model of settlement in the Alamitos Bay region is essentially synchronic, but is pushed through time to explain diachronic changes. The behavioral scenario suggested by the model is as follows: Initially groups of people inhabit lagoonal environments because of the abundance of resources. During this initial period, if environmental perturbations cause the resources of the lagoon to decline, the population relies on its mobility to relieve stress. As populations began to increase, the initial change in the adaptive strategy was probably the addition of new resources to the diet. As the regional population continued to grow, mobility became increasingly restricted, groups began to settle for longer periods of time, common property was established, additional resources were probably also explored, and trade began to play an important role in risk management (Arnold 1987; Wlodarski 1979). With restrictions on movement and larger populations living in areas prone to environmental disasters, a means to slough off portions of the population was necessary to the survival of the group as a whole. This was achieved through sociopolitical means. During natural disasters, the leaders of the community, with access to the most stable land, would maintain control over the territory while the rest of the settlement was sent foraging into other areas where resources were plentiful. This strategy was probably successful even in the largest floods. During these times the entire estuary was probably unable to support even a small population and thus the group was in little danger of losing their control of the region. Smaller groups forced to forage in surrounding areas would be more easily absorbed into neighboring rancherias than large groups. In addition, surrounding rancherias were often allied under the leadership of a single chief (Bean and Smith 1978), making this integrative process a much easier task.

After a period of time, the estuary would regain its resources and populations would return to the resource-rich environment relieving stress throughout the region. This process requires only that people be able to leave the estuary when greater returns to labor were available elsewhere and, similarly, that people be able to return to the estuary when conditions return to normal. Each annual variation in the availability of stable lands reinforced the system of prioritization.

The correlation between the Late period social relations of production and the economy probably led to the development of class stratification among the Gabrielino during the Protohistoric period. This transformation may have led to changes in the economy toward a more intensive production system. Collective responses of the rancheria were complemented by individual profit motives operating within the bounds of the established rancheria hierarchy. The model places individual risk management strategies within the context of a rancheria's response to chaotic flood episodes. The communal response to flooding is thus political and not economic because it resolves conflict within the community rather than maximizing production. Long-term success of the local settlement system was made possible by the flexibility of populations and the social hierarchy that allowed for controls over land and resource use.

It should be pointed out that although Dixon's notion of a "moving" village may appear to be similar to our conception of a rancheria, there are fundamental differences between the models. Dixon's view is of a single village that physically changes location periodically, whereas we argue that the "village" population is spread between several locations, with wealth and power distinguished by topographic position. In essence, Dixon argues that the Gabrielino model of permanent villages applies to the Alamitos Bay, albeit in miniature. Villages are small and frequently move. We argue

that permanency, which appears to characterize more stable areas of the coast, may not have been practiced in less stable estuaries. Instead, small habitation sites that moved in greater frequency than a generation may have been established around a more stable core area. Placement of these sites was based on social position and spatial layout reflected and reified the social order.

The two models described above would be reflected in the archaeological record very differently. Dixon's villages should be mirror images of each other. Each should contain evidence of a similar sized population, with similar layouts and patterns of intrasite variability in terms of wealth and status. All should contain evidence of permanent occupation or planning depth as discussed by Raab (1993a). Our conception should be reflected by sites of different sizes, representing different sized social groups. The sites should be occupied for different lengths of time. Wealth within each settlement should be relatively homogeneous. Between sites, however, status and wealth differences should stand out and potentially be correlated with environmental features.

Regardless of the differences, both models agree that sites dating to the protohistoric and ethnohistoric periods in this area were part of the *Puvunga* community. Whether the community was largely homogenous in terms of settlement as argued by Dixon, or highly differentiated as put forth here, can only be resolved through archaeological research.

PART 3
ETHNOGRAPHIC RESEARCH

CHAPTER 8
NATIVE AMERICAN BELIEFS REGARDING PUVUNGA AND THE BELLFLOWER PROPERTY

Michael Baksh

INTRODUCTION

Goals Of The Ethnographic Study

The basic objective of the ethnographic component of the project was to elicit information from Native Americans about what they know about *Puvunga* and the Bellflower Property, a 22-acre parcel located at California State University Long Beach. More specifically, the goals have been to ascertain what the "most likely descendents," elders, and other knowledgeable Native Americans of the area know about *Puvunga* and the religious leader known as *Chinigchinich*; what their perspectives are on the location of *Puvunga*; and whether the Bellflower Property is regarded as sacred. These goals are summarized below.

Goal 1: Knowledge About Puvunga And Chinigchinich

The first major ethnographic goal was to elicit information on what Native Americans know about *Puvunga* and *Chinigchinich*, and in particular, what is known about any potential relationship between the place and the deity. The study sought to determine whether *Chinigchinich* was born at *Puvunga*, whether he was closely associated with *Puvunga* as a tribal "lawgiver" or god, and/or whether he died there.

Goal 2: Perspectives On The Location Of Puvunga

The ethnographic study also sought to gain any Native American insights on the precise location of *Puvunga*. In particular, the research attempted to determine whether the Native American community knew or believed *Puvunga* to be located on the Bellflower Property or a portion of it. A related goal was to determine whether *Puvunga* was a village or whether it encompassed a larger regional area.

Goal 3: Perspectives On The Sacredness Of The Bellflower Property

Perhaps the most important goal of the ethnographic study was to understand the perspectives of the most likely descendents and other knowledgeable Native Americans regarding the potential sacredness of the Bellflower Property. The goal was also to determine why the property is sacred, for those who recognize it as such, and alternatively, why it is not sacred, for those who believe it is not.

In the effort to meet these goals, the author was directed to interview as many of the most likely descendents as possible, as well as other interested and knowledgeable Native Americans. This chapter presents the findings of those interviews.

Chapter Organization

Following this Introduction, Section II of the chapter presents the methods of the ethnographic study. Sections III through VI then focus on the interview findings. More specifically, Section III reviews the nature of the knowledge that Native Americans maintain about ancestral uses of the Gabrielino area during pre-European contact and early ethnohistoric period, and discusses Native American perspectives on "sacredness." Section IV addresses the first goal identified above with a discussion of current Native American knowledge about *Puvunga* and *Chinigchinich*. Section V addresses the second goal with a presentation of Native American perspectives on the location of *Puvunga*. The third goal of the study is addressed in Section VI with a discussion of Native American perspectives on the sacredness of the Bellflower Property. Section VII concludes the report with a summary of the study.

METHODS

Native American Respondents

The author was provided with a typed list of eight most likely descendents to interview. The list included each descendent's name, address, telephone number, and tribal affiliation (see Appendix 4, Attachment 1). The individuals on the list included the following Native Americans:

Name	Tribal Affiliation
Martin Alcala	Gabrielino
Cindi M. Alvitre	Gabrielino
Vera Rocha	Gabrielino
Jim Velasquez	Gabrielino
Philip Ibanez	Luiseno
Vincent Ibanez	Luiseno
Jennie Miranda	Luiseno
David Belardes	Juaneno

The typed list also had the hand-written names of two additional knowledgeable individuals to be interviewed: Bernard Alvitre and Lillian Robles.

Beginning in early September 1993, an effort was made to interview all the most likely descendents and knowledgeable individuals named above, with the exception of Mr. Bernard Alvitre. Bernard Alvitre was not contacted due to an early conversation with Ms. Cindi Alvitre who, upon asking about and learning the names of other individuals on the list, stated rather firmly that "Mr. Alvitre will not be participating in the study." It was assumed that Ms. Alvitre knew Mr. Alvitre to be unwilling to be interviewed, in poor health, or otherwise indisposed.

The intensive effort to contact all other individuals was initially made by telephone. Upon making contact, the author described his role as an ethnographer for the Cal State Long Beach/*Puvunga* project. He also explained the goal of interviewing the most likely descendents and other Native Americans regarding their knowledge and feelings about *Puvunga*. The author asked each individual if he or she would be interested in meeting for an interview, and answered any questions. Most individuals inquired about the other most likely descendents, and most also asked who was paying the ethnographer's salary. Regarding the latter, the author explained that he was hired by Statistical Research Inc., who had contracted with the University, and went on to explain that his reputation and livelihood depended upon maintaining strong relationships with Native Americans and producing objective ethnographic reports.

The author emphasized that the interviews for this project would result in an objective report. A few individuals were concerned about confidentiality. The author explained that confidentiality would be maintained and that respondents' comments, questions, and perspectives would not be attributed to anyone by name. Some individuals were not concerned about confidentiality; at least one remarked that his position was already well- known.

In several instances, interviews were scheduled or tentatively scheduled during the initial telephone contact. In other cases, it was requested that the author call back at a later date to discuss the matter further. All such requests were conducted and, in some instances, several telephone calls were made in the effort to arrange an interview. As explained below, some individuals were disinclined to be interviewed, and the author was requested to cease efforts to contact them. It should also be noted that two individuals -- Philip Ibanez and Jennie Miranda -- could not be contacted by telephone. Letters were sent to these two individuals asking that they contact the author. Mr. Ibanez subsequently made contact by telephone; no communication has been received from Ms. Miranda with regard to this project (see Appendix 4, Attachment 2 for copy of letter from the author to Ms. Miranda).

To date, only five of the individuals listed in Appendix 4, Attachment 1 have been interviewed for the study. These individuals include Martin Alcala, Vera Rocha, Jim Velasquez, Philip Ibanez, and Vincent Ibanez. In addition to interviewing these five most likely descendents, four other knowledgeable Native Americans were interviewed. These individuals include Manuel Rocha, a Gabrielino spiritual leader; Robert Dorame, spokesman of the Gabrielino Tribal Council; Sam Dunlap, a Luiseno and Juaneno tribal member of the Pechanga Band of Luiseno Indians; and Ray Basquez, a Luiseno spiritual leader and tribal member of the Pechanga Band of Luiseno Indians. Mr. Rocha was interviewed in the company of Mrs. Rocha; Mr. Dorame was interviewed with Mr. Alcala; and Mr. Dunlap was interviewed with Mr. Phillip Ibanez. A comprehensive telephone interview was conducted with Ray Basquez.

Four of the most likely descendents and other knowledgeable individuals listed in Appendix 4, Attachment 1 were not interviewed due to their involvement as plaintiffs with the Native American Heritage Commission in a lawsuit related to the Bellflower Property against the Board of Trustees of California State University, Long Beach. These individuals include Cindi M. Alvitre, David Belardes, Lillian Robles, and Bernard Alvitre. Efforts to interview Ms. Alvitre and Ms. Robles continued up until October 26, 1993, when the law firm of Strumwasser & Woocher and the ACLU Foundation of Southern California, representing the plaintiffs in the lawsuit, requested that the author refrain from contacting their clients (see Appendix 4, Attachment 3: Raleigh H. Levine fax dated October 26, 1993 to Dr. Baksh). An interview had been scheduled with Mr. Belardes prior to this communication; the author subsequently cancelled this scheduled interview at the request of Ms. Levine.

Following receipt of the correspondence from Ms. Levine, the author and Dr. Altschul indicated to Ms. Levine the hope that Mr. Belardes and her other clients would agree to be interviewed in her presence or under other preferred conditions (see Appendix 4, Attachment 4: Michael G. Baksh letter dated October 27, 1993 to Raleigh H. Levine, and Jeffrey H. Altschul letter dated October 27, 1993 to

Raleigh H. Levine). Ms. Levine communicated with the author in a letter dated November 1, 1993 (Appendix 4, Attachment 5), but otherwise has not indicated that her clients are prepared to be interviewed or to respond to written questions.

Interview Characteristics

Except for the telephone interview with Mr. Basquez, all other interviews were conducted in person at the respondents' homes or at restaurants. The author was accompanied by Dr. Jeffrey Altschul during the interviews conducted with Mr. Velasquez and with Mr. and Mrs. Rocha. All interviews commenced with an explanation about the purpose and goals of the ethnographic study, and any preliminary questions or concerns about report objectivity, confidentiality, other participants, and other matters were answered to the extent possible.

The interviews were conducted in an informal manner. Once the preliminary introductions and conversations were over, it was common for respondents to start describing their perspectives about the Cal State Long Beach/*Puvunga* situation and to comment on the perspectives of other Native Americans. Typically, respondents volunteered their positions regarding the location of *Puvunga* and the sacredness of the Bellflower Property immediately after the interviews began. The author possessed a questionnaire during the interviews (Appendix 4, Attachment 6) but relied upon it only to ensure that all topics were covered. The author recorded notes of respondents' statements in a notebook by hand; no tape recorders, videos, or other recording devices were used. The interviews ranged from about one to three hours in length. Subsequent meetings or telephone conversations were conducted with several respondents to clarify certain points.

The author promised those respondents concerned with confidentiality that their statements and perspectives would be treated in this report in an anonymous manner. Anonymity is traditionally relied upon in professional anthropological research to avoid violation of respondents' trust, as well as to avoid community ridicule of respondents. In the effort to maintain confidentiality in this project, and yet lend the reader some insight and sense of continuity regarding the beliefs and perspectives of specific respondents, each of the nine respondents cited in this chapter has been assigned an alphabetic letter ranging from "A" through "I". The letters are assigned on the basis of the respondents' first appearance in the text. Like the confidential field notes maintained by the author, the identities of Respondents "A" through "I" are not available to the public.

CURRENT ETHNOGRAPHIC KNOWLEDGE AND PERSPECTIVES ON "SACREDNESS"

The remainder of this chapter is based primarily upon information provided during interviews with the Native American respondents described in Section I. Exceptions to this generalization include a few excerpts from ethnohistoric documents.

This section provides pertinent information obtained from the most likely descendants and other Native Americans regarding the question, "what is sacred?". A discussion of this topic is important for understanding many of the perspectives presented in subsequent sections of the report.

Before addressing the question of "what is sacred?", it is important to review the nature of the knowledge that Native Americans currently maintain about ancestral uses of the Gabrielino area during pre-European contact and the early ethnohistoric period.

Current General Knowledge About Traditional Beliefs And Practices

All Native Americans involved in the study recognize that a tremendous amount of traditional cultural information has been lost since initial contact with the Spanish over 200 years ago. The extent of this loss is perhaps most obviously reflected in the observation that the Gabrielino language itself no longer exists as a spoken tongue. This loss of traditional culture is all the more frustrating in view of the rich and influential culture that once occupied the area. On this matter, it is useful to quote from Bean and Smith (1978:538):

The Gabrielino ... are, in may ways, one of the most interesting -- yet least known -- of native California peoples. At the time of Spanish contact in 1769 they occupied the "most richly endowed coastal section in southern California" (Blackburn 1962-1963:6), which is most of present-day Los Angeles and Orange counties, plus several offshore islands (San Clemente, Santa Catalina, San Nicolas). With the possible exception of the Chumash, the Gabrielino were the wealthiest, most populous, and most powerful ethnic nationality in aboriginal southern California, their influence spreading as far north as the San Joaquin Valley Yokuts, as far east as the Colorado River, and south into Baja California. Unfortunately, most if not all Gabrielinos were dead long before systematic ethnographic studies were instituted; and, as a result, knowledge of them and their lifeways is meager.

This extensive loss of culture certainly does not imply, however, that nothing is known about traditional beliefs and practices, or perhaps more importantly that contemporary beliefs are unimportant. Most respondents in the study indicated that some information has been handed down to them from distant ancestors by word of mouth. For example, Respondent A noted that an aunt talked about traditional things, and Respondent B mentioned that a "lot of information has been handed down to us by word of mouth." Based upon the interviews, the author was left with two overall observations of the "oral history" maintained by the most likely descendents and other knowledgeable Native Americans of this study: 1) in general, little oral history is maintained today about traditional Gabrielino culture and belief systems; and 2) the relatively small amounts of oral history information learned by individual knowledgeable Gabrielinos have been shared at the household level and among close relatives and friends, but generally not at some higher social level of organization.

It should perhaps also be noted that, of those interviewed for this study, the Luisenos appear to maintain a stronger oral tradition and history of information sharing. This observation has no doubt resulted from the facts that Luiseno cultural traditions survived Western contact better and that these individuals live in close proximity with one another and interact regularly. This is not to say, however, that all Luisenos interviewed for this study are always in agreement on specific matters. Rather, since the pieces of orally transmitted information learned by some respondents have not been widely shared with others, it is reasonable to expect that the many respondents' perspectives and beliefs are divergent.

Many respondents also stated that they obtained some of their knowledge about Gabrielino culture and belief systems from anthropologists, archaeologists, historians, and ethnohistoric accounts. For example, Respondent C mentioned that about half of the knowledge maintained by that respondent came from books and about half from ancestors. Several respondents mentioned specific ethnohistoric materials that contributed to their knowledge and suggested that they be read for insights to Gabrielino culture. The materials cited by these respondents include Bernice Eastman Johnston's *California's Gabrielino Indians*, Father Geronimo Boscana's *Chinigchinich*, and A.L. Kroeber's chapter on the Gabrielino in his *Handbook of the Indians of California*. These materials are among the most useful works available on the Gabrielino but, as mentioned previously, the ethnohistorical data available for this culture is relatively meager.

Another source of information for at least some Gabrielinos and Luisenos may be described as spiritual, which is a common source of information for spiritual leaders and others in many of the

world's societies. Elsewhere in southern California, dreams are a major source of knowledge among the Yuman-speaking groups of the Lower Colorado River area, and traditionally the strongest leaders, shamans, warriors and orators were accepted largely due to their dreams. In this study, Respondent D indicated that a considerable amount of Gabrielino cultural knowledge is acquired through dreams and other experiences. In the words of this respondent:

We've learned a lot of things that haven't been told or shown to us. Sometimes we learn things that are taught to us by the spirits. [We] don't always learn things from writings the way that some people learn things from the Bible. Things come to us in signs and symbols.

The same respondent stated that "my history has been passed on [to] me through the spirits of my ancestors," and that "I get all my energy from my ancestors. I can ask them to send my knowledge and they do. You know, I don't just say things off the top of my mind."

Respondent D, in regard to the position that *Puvunga* is located at the Bellflower Property on the CSULB campus, has a "special feeling" about this site being the location of that village. This special feeling was described as being similar to other feelings experienced by the respondent in the past, like one experienced just prior to a large earthquake in the region a few years ago. "Things like this just come to us. This knowledge helps us. That's why we're still here."

In summary, it is apparently due, in large part, to the inherited bits and pieces of different information along different family lines, the limited availability of ethnohistoric data, and the spiritual acquirement of beliefs and other information by at least some individuals that much of today's "collective" Native American knowledge about traditional Gabrielino culture is not shared or recognized by all most likely descendants and other knowledgeable individuals of the study area. That is, much of the knowledge that is known about traditional beliefs and practices by specific individuals is not highly shared at a tribal level or other high level of social organization. In this situation, it is not unreasonable that a range of perspectives and beliefs would be expressed.

What Is Sacred?

Native American perspectives on the importance of the 22-acre parcel proposed for development appear to be shaped, in large part, by feelings on what constitutes sacredness. Although all Native Americans interviewed for this study recognize that some objects are sacred and that some sacred sites or locations exist, there is a wide diversity in the specific types of geographic areas, sites, human remains, artifacts, and locations that different individuals regard as sacred. Respondents were asked to describe or list the types of places or objects that they recognize as sacred. Based upon the responses, the types of places and objects may be organized into three categories: Mother Earth and Gabrielino Territory, Villages and Cemeteries/Burials, and Artifacts. The various perspectives on these categories can be summarized as follows:

Mother Earth and Gabrielino Territory

Perhaps the most severe disparity in Native American beliefs about what constitutes sacredness exists at this most general level which includes Mother Earth and Gabrielino Territory. To a large extent, Native American differences in opinion regarding the sacredness of the Bellflower Property stem from differences regarding the sacredness of the earth, Gabrielino territory, and villages within Gabrielino territory. Thus, at one extreme, two respondents (D and E) recognize the entire earth, and the entire Gabrielino traditional homeland, in particular, as sacred. Respondent D, for example, stated

repeatedly that "the earth is sacred," and that "it is important to treat Mother Earth with respect." While it might be tempting to dismiss this fairly all-inclusive notion of sacredness as one that is not sincere or one that does not include some sense of religious significance, this is not the case. To the contrary, Respondents D and E were clearly genuine in their beliefs that the entire earth is holy, that it has been violated too much already, and that it must be treated with increased reverence. Both respondents devote considerable time and effort praying for Mother Earth, conducting ceremonials in the Los Angeles area, and nurturing wildlife. These individuals adamantly feel that Mother Earth has been desecrated too much already. Respondent D lamented: "We have to give something back to Mother Earth. That's why it's good to plant and grow vegetables at *Puvunga*."

In an extreme opposite position regarding the sacredness of the entire earth and Gabrielino territory, Respondent C maintains respect for the opinions of Respondent D but does not recognize the entire Gabrielino area, let alone the entire earth, as being sacred. Indeed, Respondent C feels that "there is nothing sacred in L.A. anymore." Upon further questioning, however, this individual recognizes a few sacred sites in the region which were subsequently described as "Turtle Rock" in Santa Ana, portions of Irvine Ranch, and especially "Bolsa Chica which has salt marshes with amphibian turtles." Also mentioned was "Giant Rock" in the high desert to the east near Landers.

Of those interviewed for this project, only Respondents C, D, and E offered perspectives on the sacredness of Mother Earth and the entire Gabrielino territory. Although the two extreme positions expressed above are insightful, such positions offer little guidance on where development activities can proceed or where they should be restricted. Thus, with all due respect to the position of Respondents D and E, it is clear that development will continue to occur throughout the region. Realistically, therefore, such an all-inclusive identification of the entire region as sacred offers little practical guidance for land use planning and decision- making. On the other hand, it is likely that more sacred sites may exist than those listed in this chapter. Importantly, it cannot be assumed that all sacred sites, particularly those limited to archaeological remains, have already been found or are already known. Some middle ground should perhaps be established to help identify the sacredness of such sites. This middle ground would ideally be reached by Native American consensus and would identify specific physical indicators of sacredness.

Villages and Cemeteries/Burials

In addition to maintaining strong feelings about Mother Earth, Respondents D and E are even more adamant that the locations of Gabrielino villages and cemeteries are sacred. According to Respondent D, "villages [in Gabrielino territory] are located everywhere.... Wherever there is a village, which would have had about 3,000 people, there is a cemetery. Cemeteries are highly sacred." The same respondent, with specific regard to *Puvunga*, observed that "*Puvunga* is the name of a village; *Puvun* means *sacredness* and *nga* means *village*. *Chinigchinich* was buried there."

Respondent B recognizes cemeteries and places of specific religious or ceremonial events as sacred, and also extends the notion of sacred places to include homes and areas of habitation. This perspective is expressed in the following statement: "That entire [CSULB] ground is probably holy in terms of the Gabrielino religion. For some people, even the area where they live is holy. Like today, many Mexicans bless their homes, today all Indians bless the ground. Even today at pow wows, these sites would be considered sacred and not just places to have a good time."

With the exceptions of Respondents B, D, and E, the other respondents interviewed for this project do not feel that villages or other habitation areas are inherently sacred. Villages or portions of villages can be sacred but, in these individuals' perspectives, sacred areas are typically associated with religious or ceremonial uses. In the effort to compile a list of specific Gabrielino sites, it must be noted

that, in addition to those listed above, Respondents F and G mentioned that the site of Kuruvungna Springs at University High School in west Los Angeles is highly sacred. Several respondents also mentioned that *Puvunga* would be considered sacred regardless of where it exists, if it in fact portions of it still exist today.

All respondents indicated that cemeteries are sacred. Extreme positions exist, however, on whether isolated burials are sacred. Respondents B, D, and E feel that all burials are sacred and, correspondingly, that all sites with a burial or burials are sacred. The other Native Americans in this study feel that isolated burials in themselves are not necessarily sacred but must be handled with the utmost of respect. Respondent C maintains that "even burials don't make a site sacred. So long as they are treated with dignity. Burials are everywhere." This respondent interprets a site with six or more burials as a dedicated cemetery and therefore a sacred place.

All respondents recognize that individual burials may be sacred when associated with particular funerary items. These items are described below.

Artifacts

Of potential relevance to the archaeological site located on the Bellflower Property, an effort was made to compile a list of items that are regarded as sacred or that would indicate an archaeological site is sacred. The extreme positions maintained by respondents on other issues related to this project are also reflected in the types of objects considered to be sacred, and whether the existence of sacred objects at archaeological sites make those sites sacred. At one extreme, Respondents D and E feel that all archaeological sites and all cultural materials and human remains within them are sacred and should not be disturbed.

Several respondents volunteered that the presence of *olivella* or abalone shell necklace beads would indicate a sacred site, particularly when associated with a burial. Quartz crystals and urns used for cremations were commonly noted as being sacred, as are cog-stones when associated with burials.

Respondent B indicated that a small bowl about three to four inches in diameter, known as a *tamya/s*, indicates that a site is sacred. These bowls were used for important ceremonies, possessed by the important chiefs, and handed down to direct descendants who became chiefs. Respondent B also stated that if a portable metate used for grinding medicinal herbs, described as a *topal pumal*, is found in association with a *tamya/s*, this would indicate a highly sacred site. The same respondent noted that if a steatite (soapstone) pipe or piece of steatite pipe is found, this is an indication that a site is highly important. Respondent B specifically defined sacred objects as those items used during or otherwise in association with traditional religious ceremonies and other practices. Such ceremonies were related to a wide variety of beliefs and practices. In the words of this respondent, "even an arrowhead can be considered sacred. The Indians had beliefs associated with arrowheads to make them shoot certain animals."

Several respondents indicated that should a combination of the above artifacts be found at a site, they would cumulatively indicate a sacred site. Such a site would be particularly important if these artifacts were found in association with burials or a cemetery. Based upon interviews with most of the respondents, the author was left with the general feeling that, for archaeological sites, there is an association between sacredness and the types and amounts of artifacts/burials present: a site with numerous burials and examples of the objects listed above would be regarded as more sacred than a site with few or no such objects. Importantly, however, it must also be emphasized that a site need not contain human remains, sacred items, or any cultural materials to be regarded as sacred. To be sure, numerous sacred mountains, power sites, ceremonial centers, and other important locations that lack

archaeological components are recognized as sacred sites by Native Americans. The presence/absence of certain artifacts and human remains applies specifically to archaeological sites for which ethnographic or ethnohistoric information regarding sacredness is not available, or perhaps not conclusive.

Determination of Site Sacredness

The current diversity in Native American perspectives on the types of objects and sites that are sacred undoubtedly stem from the overall loss of cultural knowledge, beliefs, and practices as described previously. Some information has been handed down from generation to generation, other information is acquired through spiritual means, and a small amount of information has been recorded in the ethnohistoric literature. However, enough information is simply not known and, perhaps more importantly, shared in a manner such that all maintain a similar perspective on what is sacred.

However, most respondents were adamant that archaeologists are not the ones who should be interpreting burials or artifacts as sacred. Most individuals in the study feel that archaeologists simply do not have the cultural knowledge and training or responsibility for making such interpretations. As stated by Respondent B, the "artifacts associated with Indian people who were buried are often overlooked by archaeologists." This respondent went on to note that, "the things found at a site need to be identified by the Indians of that area." Respondent B concluded that "the problem is that scientists look at things and determine on their own whether the items are sacred or not. This is not right. The Indians are the ones who need to decide." As an exception to this general Native American perspective, it should be noted that one of the respondents often accepts what archaeologists write. Respondent C stated that "if [Dr. Altschul] says that based on what he found archaeologically, that the site is sacred, then I would buy it."

Most respondents also observed that some Native Americans interpret certain items as sacred and others do not. In the words of Respondent H, "the problem is that different [Native American] people interpret things as sacred or not. For example, while [so-and-so] would say that a pebble on a site is sacred, everyone else would say that it is not sacred." The opposite perspective, of course, is that some Native Americans do not properly recognize or interpret all sacred items as being sacred.

Many of the respondents who feel that various Native Americans interpret items differently volunteered that the responsibility for making such interpretations should fall on the Native American individuals or groups that deal with cultural resource matters in the immediate area. As stated by Respondent H, "since different [Native American] people interpret things differently, it should always be up to the closest most likely descendents of an area to make the final decision." It must be noted that all Native Americans concerned with the Bellflower Property would likely not agree with this position.

In interviews conducted with the most likely descendents and other knowledgeable Native Americans, the author and/or Dr. Altschul were always emphasizing that the current project did not include additional archaeological work at the Bellflower Property. Respondents D and E, who expressed opposition to the proposed development of the parcel, were relieved to hear this and generally felt that additional archaeological work is unnecessary and would prove nothing.

Respondent B, also opposed to the proposed development, asked, "why is it that we have to prove that it is a sacred ground?" This respondent continued on to state: "If one hole shows nothing, would this indicate that nothing is anywhere there? It is hard to prove things like sites are sacred. Things are handed down from generation to generation. The University says prove that it is sacred. But this may be tough to do. My advice is to just leave it alone." Respondent B observed that "everything has turned

into a big fiasco. If allowed, it would be necessary [for the archaeologists] to dig 5-6 feet to find anything due to the gardening topsoil on top. Digging at the site could work for or against the Indians or the University." Despite general opposition to the project and to additional archaeological work at the site, Respondent B concluded that "excavation of the site would indicate the presence or absence of sacred things," and that "if the Gabrielino people are in agreement, [archaeologists] could excavate a couple test pits to determine the layers of ground and to see if anything is there once and for all."

Respondents A, C, F, G, H, and I stated or indicated that they would not be opposed to subsurface archaeological work at the Bellflower Property. It is the impression of the author that these individuals, as well as Respondent B, feel that excavation of the site would reveal the presence or absence of sacred items. Lacking an alternative solution, the archaeological detection of several sacred items or burials, as determined by Native American consultants, would indicate a sacred site, particularly if the ethnohistorical record indicates that this location possibly included the village of *Puvunga*.

KNOWLEDGE ABOUT *PUVUNGA* AND *CHINIGCHINICH*

Current Native American Knowledge About *Puvunga* and *Chinigchinich*

Knowledge About Puvunga

The Native Americans interviewed for this study generally recognize some kind of relationship between *Puvunga*, a place, and *Chinigchinich*, the name of a major leader in the area who has been most popularly described as a "lawgiver." Most respondents indicated that they think of *Puvunga* as a village; some feel that it could possibly refer to a larger geographic area such as that currently occupied by Long Beach. The impression of the author is that most Native American knowledge about *Puvunga* was learned from the ethnohistorical literature available on the Gabrielino, or from those familiar with such literature. As described in the previous section, however, some respondents indicated that they had acquired some knowledge from spiritual means and from their ancestors. For example, Respondent A noted that an aunt had talked about *Puvunga*, and Respondent C stated that a lot of that individual's knowledge was obtained not only from books but also from parents and other ancestors.

The viewpoint that *Puvunga* was an important, permanent village was perhaps best summarized by Respondent B:

Puvunga was a home for some of the Gabrielino. It was village where people lived, worshipped, gathered, and were buried. When people died and were buried there, the others did not move off. It was not a temporarily used site, but rather, was used all year-round. People from inland went there to exchange inland products for items that the people at *Puvunga* had obtained and manufactured on the coast.

Respondent B also noted that *Puvunga* was located at a place with important subsistence resources. Such resources included the coast, streams, nearby oak trees, and other vegetation used for collecting food and other products. According to this individual, the people of *Puvunga* "lived by the ocean and occupied the surrounding area. There was no reason for them to move. On the other hand, people in the mountains and other places had to move when they got cold or hungry. But at *Puvunga*, you can tell by the trees, vegetation, location, the river, that it is an important place." Respondent D emphasized that "*Puvunga* was a gathering place for all people."

In contrast to some of the information presented above, Respondent C expressed astonishment at what other Native Americans claimed to know about *Puvunga*. This individual described extensive familiarity with the Long Beach area over a lifetime and explained that all materials available on the Gabrielino had been thoroughly read. According to Respondent C, this respondent's parents and grandparents knew as much about Gabrielino culture and traditions as anyone and passed this information along. Yet, according to this respondent, they never described *Puvunga* to the extent that others purportedly know about it today. The implication was that some Native Americans, particularly those arguing that *Puvunga* is sacred and located at the Bellflower Property (see next section), are exaggerating their knowledge of the site.

Knowledge About Chinigchinich

The impression of the anthropologist is that most Gabrielino knowledge about *Chinigchinich*, like that of *Puvunga*, originally stems from the ethnohistoric record. Several respondents had read ethnohistoric materials, and all had certainly learned much about *Chinigchinich* by word of mouth from those familiar with such materials.

All Native Americans but one were in agreement about the important role that *Chinigchinich* played as a spiritual and social leader. Respondents consistently described him as the "lawmaker," "lawgiver," or "giver of laws." *Chinigchinich* was typically described as a man, in contrast to *Wiyot* who was described by some as being the god of their ancestors. According to Respondent B, "our God instructed *Chinigchinich* to be the lawmaker and to make sure people did what god wanted them to do." This respondent continued on to state that "all these things are mentioned in our songs, which have been handed down to us." Respondent D described *Chinigchinich* as "a human being -- a very wise man whose point of view was to keep the peace among everyone."

Chinigchinich clearly played a major role in maintaining order and social control and reducing conflict. In addition to teaching and imposing rules of conduct, he also had the authority to reward or punish behavior. Respondent D noted that with regard to the crime of stealing, for instance, "*Chinigchinich* had a rule that if someone stole a turkey or a gourd, he gave the victim the right to take a boy or girl from the thief to have as a husband or wife."

Regarding the birthplace of *Chinigchinich*, Respondents A, F, and G felt that he was born at *Puvunga*. Respondents C, D, and E stated that *Chinigchinich* was born on Catalina Island and later moved to the mainland, and the others did not state or were unsure of where he was born. Regardless of his birthplace, some respondents felt that *Chinigchinich* was based at *Puvunga* and spent much of his time travelling around the Gabrielino, Juaneno, and Luiseno area teaching and enforcing laws. Others mentioned that he lived on his own, and not in *Puvunga* but perhaps just outside the village part of the time, and that people came to him. Respondent D volunteered that "*Chinigchinich* was well-respected by all nations along the coast, not just by the Gabrielino. He was well-known in the area."

Respondents B, D, and E stated that *Chinigchinich* died at *Puvunga* and was buried at that location. As stated by Respondent D, "*Chinigchinich* was buried somewhere in the *Puvunga* area." Respondent B believes that "*Chinigchinich* was cremated and then buried at *Puvunga*." The remaining respondents were uncertain of where *Chinigchinich* died.

Only one respondent recognizes no significant relationship at all between *Chinigchinich* and *Puvunga*. Respondent C had learned that *Chinigchinich* was born on Catalina Island and moved to the mainland, but feels that there was no unique relationship between *Puvunga* and *Chinigchinich* that makes *Puvunga* deserving of being identified as a sacred place. According to this respondent, "*Puvunga* was never a ceremonial village." In elaborating on this issue, this individual exclaimed: "In talking with

my parents and grandparents about Gabrielino culture and traditions, I never heard anything about *Puvunga* and *Chinigchinich*! The coastal Gabrielino never picked up the practices of *Chinigchinich*!" This respondent believes that *Chinigchinich* had a much greater involvement with the Juaneno and Luiseno than with the Gabrielino.

Relationship Between Current Beliefs And Ethnohistoric Record

Ethnohistoric Accounts of Puvunga and Chinigchinich

Chapter 3 details the relevant ethnohistorical data related to *Puvunga* and *Chinigchinich*. It is useful here, however, to highlight specific ethnohistorical information that addresses the current Native American beliefs stated above.

Much of the Native American knowledge about *Puvunga* and *Chinigchinich* described above is reflected in ethnohistorical accounts. For example, *Puvunga* apparently existed as a village; Father Boscana referred to *Pubuna* as a "Rancheria" (Robinson 1969:251), a term used by the Spanish to describe Indian villages. In addition, there is some evidence that *Puvunga* was indeed an important social center. In an effort to understand the meaning of the name, *Puvunga*, Bernice Johnston noted that the word *Puvunga* "evoked but one associated phrase from Harrington's informant, "en la vola." It is possible that he meant, in his Shoshonean Spanish, "en la bola." This could carry the connotation, "in the crowd" (1962:39).

It must be noted that the birthplace of *Chinigchinich* is not well established in the ethnohistoric literature (see Chapter 3). For example, according to Johnston, *Puvunga* was the birthplace of *Chungichnish* and the place where he revealed himself as lawgiver and god (1962:45). Johnston also notes, however, that when *Chinigchinich* assumed leadership in *Puvunga*, "he called himself *Chungichnish* and said he came from above" (1962:43).

Father Boscana, on the other hand, was uncertain about where *Chinigchinich* was born:

Many years, and perhaps ages, having expired since the death of *Ouiot*, there appeared in the same town of Pubuna, one called "*Ouiamot*, son of *Tacu* and *Auzar*. I imagine that this new character was not, or, at least, his parents were not inhabitants of the place, but had originated in some distant land. The said *Ouiamot* did not appear like *Ouiot*, as a warrior, but as a God. To him they were offer presents. And this was the *God Chinigchinich*, so feared, venerated, and respected by the Indians, who taught first in the town of Pubuna, and afterwards in all the neighboring parts, explaining the laws, and establishing the rites and ceremonies necessary to the preservation of life (Robinson 1969:254).

Kroeber does not address the birthplace of *Chinigchinich*. Indeed, he mentions that the name *Chingichnich* or *Chungichnish* "has not been reported from the Gabrielino, but Kwawar occurs as a synonym of Chingichnich among the Juaneno and as the "creator" with the Gabrielino" (1925:622). However, Kroeber notes that the Chungichnish cult and associated ceremonial steatite objects must have originated together at Santa Catalina (1925:630). This observation has perhaps contributed to the belief by some that *Chinigchinich* was born on Catalina.

Elsewhere, according to Boscana, "the Indians say, [*Chinigchinich*] had neither father or mother, and they are entirely ignorant of his origin" (Robinson 1969:247). The inconclusiveness of the ethnohistorical record regarding the birthplace of *Chinigchinich* likely accounts for the different opinions expressed by Native American respondents on this matter.

The general Native American viewpoint that *Chinigchinich* was well-known in the area is reflected in the ethnohistorical record. For example, Kroeber described *Chinigchinich*, associated with the Jimson-weed or toloache cult that likely originated at Santa Catalina and San Clemente Islands, as being spread widely among the mainland Gabrielino and other groups. More specifically:

Among the Juaneno and Luiseno the Jimson-weed cult is intimately associated with beliefs in a deity called Chingichnich or Chungichnish. This name has not been reported from the Gabrielino, but Kwawar occurs as a synonym of Chingichnich among the Juaneno and as the "creator" with the Gabrielino. Further, certain of the animals of the Luiseno worship, such as the raven and rattlesnake, reappear with religious significance among the Gabrielino. There can thus be little doubt that these people also acknowledged the divinity. The problem which we can not answer is whether they knew him under another name, or whether Chungichnish is itself a Gabrielino term which happens not to be mentioned in the scant sources of information upon this tribe (1925:622).

Elsewhere, Kroeber reiterates the important relationship between *Chinigchinich* and the Gabrielino as follows:

It must be said once more that the frequent mention of the Juaneno and Luiseno in connections [with specific rituals] ... must not lead to an inference that the Gabrielino were in any sense dependent upon ... [the Juaneno and Luiseno]. The influence was positively the other way. It merely happens that for the Juaneno a fuller account of the religion, and among the Luiseno the ceremonies themselves, have been preserved; so that the knowledge of the borrowed rites of the southerners must be drawn upon for an understanding of the recorded fragments of the older and probably more elaborate Gabrielino cult (1925:627).

The perspective that *Chinigchinich* was well-respected and had the ability to reward or punish behavior is also reflected in the ethnohistorical literature. According to Boscana: "The name *Chinigchinich* signifies "all-powerful" or "almighty," and it is believed by the Indians, that he was ever present, and in all places: he saw every thing, although it might be in the darkest night, but no one could see him. He was a friend to the good, but the wicked he chastised" (Robinson 1969:247).

The ethnohistorical literature is not clear about where *Chinigchinich* died and where he was buried or cremated. Indeed, one ethnohistoric account maintains that *Chinigchinich* requested not to be buried. As described by Father Boscana, "the name of *Quaguar*, was given to him when he died and ascended above, among the stars" (Robinson 1969:255). More specifically:

Chinigchinich having become seriously indisposed, and while instructing the elders how to rear the young, as well as in the rules they were to observe for the future, they enquired of him where, or to which one of his rancherias he wished to go when he died? He answered, "to neither, for they were inhabited by people, and he should go where he would be alone, and could see the inhabitants of all the pueblos and rancherias." They offered to bury him, placing him under the earth, but he said "no," that then they would walk upon him, and he would have to chastise them. "No!" said *Chinigchinich*, "when I die, I shall ascend above, to the stars, and from thence, I shall always see you... *Chinigchinich*, at length, died (1969:255-256).

Is Native American Knowledge Based Upon Ethnohistory Or Oral Tradition?

The impression of the author is that most current Native American knowledge about *Puvunga* and *Chinigchinich* has originated from accounts in the ethnohistorical literature. This observation should not be surprising in view of the severe loss of Gabrielino culture over the last few centuries. Thus, although the Gabrielino were one of the wealthiest and most influential cultural groups in the area,

much less is known about them than other smaller and less influential groups. According to several ethnographers, virtually all the traditional Gabrielino were deceased long before systematic ethnography could take place among them (e.g., Kroeber 1925:631). The society's numbers and culture were largely decimated by Spanish contact which began as early as 1542. As described in an overview of the Gabrielino by Bean and Smith, "by 1900 they had ceased to exist as a culturally identifiable group" (1978:538). Similarly, as summarized by Johnston:

Most of our knowledge of the social, political, and religious systems of these tribes comes from the work of anthropologists and ethnologists among survivors of the Serrano, Luiseno, and Cahuilla clans, and even among those of the very small independent group known as the Cupeno.... The largest group of all, the Gabrielino, disappeared before much systematic inquiry had been made. Without the writings of Hugo Reid and Father Geronimo Boscana we should be poor, indeed. The informants of John P. Harrington, early in our own century, added considerably to our knowledge of the cultural elements and their comments on the place-names are sparkling highlights from a vanished era. The research of Kroeber and some others has preserved for us information otherwise lost (1962:21-22).

As emphasized by Boscana (Robinson 1969:235-236), much of the detailed knowledge relating to the religious system was seemingly lost due in large part to the fact that considerable religious knowledge and associated ceremonial beliefs and practices were in the hands of relatively few specialists, rather than being commonly known.

Nevertheless, as described in the previous section, several respondents in this study indicated that they had learned bits and pieces of traditional knowledge from their ancestors, and at least some individuals maintain that they have acquired knowledge through spiritual means. It must be emphasized again that the Luiseno still appear to maintain a fair amount of knowledge based upon oral tradition.

Implications

The lack of a strong oral tradition together with the existence of an ethnohistorical record that is often inconclusive and lacks detailed information on several topics has several implications for the present study. First, it is generally difficult to attribute certain Native American knowledge about *Puvunga* and *Chinigchinich* to a true, unbroken oral history, and other specific beliefs to direct or indirect familiarity with historical materials that date back to the early 1800s. Second, the ultimate source of this knowledge is perhaps of little consequence in this particular study anyway. Third, since the ethnographic information on *Puvunga* and *Chinigchinich* is incomplete and sometimes at odds, it is apparent that other research techniques such as detailed ethnohistorical research and perhaps archaeological excavation would shed more light on these topics. And finally, although much knowledge about *Puvunga* and *Chinigchinich* is missing, the fact remains that the Native Americans involved in this project still maintain strong perspectives regarding such matters as the location of *Puvunga* and the sacredness of the Bellflower Property, and these perspectives are important for directing how the property should be treated.

NATIVE AMERICAN PERSPECTIVES ON THE LOCATION OF *PUVUNGA*

In the media, public hearings, and letters, the Gabrielino Indians and other Native Americans involved with or otherwise concerned about the proposed development of the Bellflower Property have generally expressed different positions regarding the relationship between *Puvunga* and the 22-acre parcel proposed for development. These positions may be categorized as follows: 1) *Puvunga* or a

portion of *Puvunga* is located at the Bellflower Property, 2) *Puvunga* is not located at CSULB, and 3) no one really knows where *Puvunga* is located. The most vocal position at public hearings and in published accounts of the situation is that the ethnohistoric village of *Puvunga* is located at the 22-acre parcel. However, it is partly the existence of these contrasting Native American viewpoints -- or, in other terms, the lack of a strong consensus in the Native American community -- that led to the initiation of the present study.

The three positions stated above are reflected in the perspectives of the Native Americans interviewed for this study. Specifically, Respondents B, D, and E stated that they believe or know that *Puvunga* or a portion of it is located at the Bellflower Property; Respondent C stated adamantly that *Puvunga* is not in the vicinity of CSULB and Respondents A, H, and I felt that *Puvunga* is not likely located on campus; and Respondents F and G stated explicitly that no one knows where *Puvunga* is located and that there is currently not enough information available to determine the exact location.

As indicated, the respondents who believe or know that *Puvunga* is located at the 22-acre parcel are absolute in this position. As stated by Respondent D, "the 22-acre parcel is just part of *Puvunga*. Really, all of Long Beach is *Puvunga*. But the 22-acre area was where the village was at. And all the rest of it is developed." The same respondent indicated that the Bellflower Property is all that is left of an area that was extensively used by Gabrielinos in the past, and wondered why this small, isolated piece of land cannot just remain undeveloped.

According to Respondent B, the village of *Puvunga* must have been located here since the nearby river and other resources of this area would have made this spot an ideal village location. This respondent summarized this perspective as follows: "My observation is that the area was a village. Probably the entire University was a village. The 22 acres was a part of the village. It may have been an area where burials or cremations exist." This respondent also lamented that "it is tough to prove things like this in black and white."

As indicated above, Respondent C expressed disbelief that anyone can claim that *Puvunga* is related to the Bellflower Property. This individual argued that "if anyone would know anything about the location of *Puvunga*, it would be me". The respondent "laughed it off" when first hearing about the current situation in which some Gabrielinos were claiming the Bellflower Property to represent *Puvunga*. In the interview, this respondent questioned, "how can all these kids [younger Gabrielino adults] and inland Gabrielinos possibly know so much about *Puvunga*? How did they learn it? How can they know more about it than me?"

The other three individuals who expressed doubt that *Puvunga* is located at CSULB were not as adamant as Respondent C, but simply felt that it is highly unlikely that *Puvunga* is at the Bellflower Property. In contrast to the interpretation that this area was an ideal location for a permanent village, these individuals feel that the area was a wetland that was inhospitable to full-time occupation. For example, Respondent A suggested that the area in the vicinity of the Bellflower Property "would have been part of a tidal marsh in those days" and therefore not an appropriate location for a village. More specifically, this respondent stated that people only lived at high locations along the coast in this region but went down to the marshy areas to exploit coastal resources.

Respondent A also said that an older aunt talked about *Puvunga* long ago. In talking with this aunt, the location of *Puvunga* was never described as being associated with CSULB. To the contrary, during this individual's earlier years while on the university campus or in that vicinity with older relatives, these relatives had always said that "*Puvunga* is over there somewhere" and pointed in a direction west of the University. This respondent felt that if there was any chance that *Puvunga* is located in the vicinity of the University, that it is "most likely where the Veterans Hospital is now located."

Respondents H and I generally shared the feelings of Respondent A with regard to the location of *Puvunga*. In the words of Respondent H, "there is no village there; *Puvunga* is not located at the University."

As indicated above, Respondents F and G concluded that no one really knows where the village of *Puvunga* was located. Respondent F summarized this position as follows:

Nobody has ascertained the exact location of *Puvunga*. But it stands to reason that *Puvunga* would be located on bluffs. I feel *Puvunga* was at Bixby Ranch. Dr. Keith Dixon went to Bixby Ranch in 1972 and said, "yes -- it is here." But then Bixby Hills Ranch got developed, and the site of *Puvunga* shifted to campus.

Respondent G shared this position and noted that even though *Puvunga* was probably at Bixby Ranch, the Gabrielino extensively used the area currently occupied by the CSULB campus. However, "because of all the construction on campus, much of the evidence of Gabrielino use of the area no longer exists."

It should be noted that the position that *Puvunga* was located at Bixby Ranch supports, or possibly stems from, the writings by Father Boscana and J.P. Harrington. Boscana's writings are summarized by Johnston as follows:

Of all the rancherias mentioned by Father Boscana the most important is the Gabrielino *Puvu* or *Puvunga*. This was the village "on the other side of San Juan Capistrano" from which the dominant religion spread southward. it stood two miles inland from Alamitos Bay, on land which in our time is known as the Bixby Ranch (1962:39).

As indicated above, the reader should see Chapters 3 and 4 for more ethnohistorical detail related to this topic.

Based upon the interviews conducted for this study, there is no overwhelming consensus on exactly where the village of *Puvunga* is located. Thus, while three individuals believe that *Puvunga* is located at the Bellflower Property, four individuals are fairly certain that it is not on campus and two others feel that enough is not yet known about *Puvunga's* exact location. Nevertheless, all respondents, probably including Respondent C, would likely acknowledge that *Puvunga* is located at the Bellflower Property should the ethnohistorical and archaeological records provide convincing evidence in support of this possibility. At this time, however, perhaps the most general consensus of the nine individuals interviewed with regard to *Puvunga's* location is the opinion that it is probably located somewhere in the Long Beach or coastal Orange County area. As indicated by Respondent C's comments that *Puvunga* has probably long since been destroyed by development activities, even this individual may agree with this statement.

ETHNOGRAPHIC PERSPECTIVES ON THE SACREDNESS OF THE BELLFLOWER PROPERTY

Interviews with the most likely descendents and other knowledgeable Native Americans for this study included discussions on their perspectives regarding the potential sacredness of the Bellflower Property. Importantly, the respondents' positions largely reflect their viewpoints regarding the potential location of *Puvunga* at the 22-acre parcel. That is, those who feel that *Puvunga* or a portion of it is located at the Bellflower Property also have strong beliefs that the parcel is highly sacred.

Similarly, those who feel that *Puvunga* is not located on campus generally feel that the property is not necessarily sacred.

The three respondents (B, D, and E) who stated that *Puvunga* or a portion of it is located at the Bellflower Property also clearly believe that property is highly sacred. As described by these individuals, their beliefs about the property being sacred stem largely from their beliefs that *Puvunga* was an important village, particularly with regard to Gabrielino religion. For these individuals, there is no doubt that *Puvunga* represented an important village and religious center due to its association with *Chinigchinich*, who played a major role in teaching religious beliefs and practices. As summarized by Respondent B: "To us, the site of *Puvunga* has a highly religious content." This individual continued on to describe the whole ground at the CSULB campus as being holy ground, and to state, "The area has a very high religious aspect. *Puvunga* is a highly religious and sensitive area. I have participated in a couple of ceremonies there, and I can feel it just based on what I have observed." Respondent B subsequently commented, "the Gabrielino people believe in *Puvunga* and that it is part of their religion. If the 22-acre site can be avoided then it should be."

Similarly, Respondent D observed: "Regardless of who is buried at *Puvunga*, it is sacred. Why don't they just leave it alone as open space?" This respondent, an elder, went on to exclaim in a clearly heartfelt manner: "Our beliefs are about Mother Earth.... Why don't they just leave the place alone. The school does not need the money. There has to be an end to destruction of this earth."

The position that the Bellflower Property is sacred can perhaps most simply be described as follows: *Puvunga* was a highly important religious center due to its association with *Chinigchinich*, the location of the village included the Bellflower Property, and therefore the property is regarded as a highly sacred Gabrielino site.

Of the respondents who stated that *Puvunga* is not located at CSULB or that the location of *Puvunga* is unknown, Respondent C felt strongly that the Bellflower Property is not sacred at all and the others felt that the parcel is likely not sacred. Respondent C stated as much: "the site is not sacred at all. I would know if it was sacred." Similarly, this individual also stated, "No way is that place sacred. I am 65 years old and I would have heard about it by now.... When did these other people start talking about the site as sacred? Who amongst them had ceremonials there? They are too young. They are just a bunch of kids." Respondent C felt that *Puvunga* may have been an important village during traditional times, but emphasized that the village has long since been destroyed by historic activities and recent urban development. The only concern of this individual about the potential sacredness of the property would be if there were six or more burials at the site.

In discussing whether the Gabrielino worshipped at Bellflower Property or elsewhere in Long Beach in the past, Respondent C was adamant that "the coastal Gabrielino did not recognize the Long Beach area as a sacred area." This individual went on to state, "I don't know how the inland Gabrielino could have worshiped at *Puvunga*," and then to exclaim, "it is our territory -- how can they [the inland Gabrielino] say it is sacred?" In the viewpoint of this respondent, there were "coastal" Gabrielino and there were "inland" Gabrielino. Coastal Gabrielinos resided and currently reside along the coast or on islands, and inland Gabrielinos are away from the coast. The coastal Gabrielino kept the inland Gabrielino from coming near the shore, according to this respondent, and "in fact, inland Gabrielino almost faced famine because the coastal Gabrielino would not let them come to shore. The inland Gabrielino could not have come to *Puvunga*."

Respondent C also volunteered a general acceptance of what most archaeologists write. On this topic the respondent mentioned that should a large number of sacred items be found archaeologically at the site and should the archaeologists conclude that the site is sacred, "then I would buy it."

The respondents who feel that *Puvunga* is not located at the Bellflower Property also generally feel that the site is not inherently sacred. At the same time, although they currently have no reason to believe that the parcel is sacred, they have not ruled out this possibility. Most regard the archaeology site on the Bellflower Property in the same way they view other subsurface archaeology sites that have not been extensively investigated. The general consensus that can be formulated from these individuals' perspectives is that while the Bellflower Property is likely not associated with *Puvunga*, the site could prove to be sacred based upon the types of items that it contains. As summarized by Respondent H, the site "could be sacred; it would require archaeological work. The opponents to construction of the 22 acres will never have any justification for claims that the area is a village or a sacred site without an archaeological dig." It should be noted that the individuals who maintain this perspective also feel that *Puvunga* was an important religious site during traditional times. Although skeptical that the village exists undisturbed today, they feel that it would be important and sacred site if it did exist.

SUMMARY AND CONCLUSIONS

Summary

A vast amount of traditional Gabrielino cultural knowledge has been lost over a period of more than 200 years due to severe acculturation, assimilation, and other processes of cultural change inflicted upon this Native American group by European society. The ethnohistorical record is also lacking and inconclusive with regard to many issues. Furthermore, and largely as a consequence of severe cultural loss, much of the knowledge maintained today by individual Gabrielinos and other most likely descendents of the study area is not known or shared by all. Most succinctly, various descendents have learned different things, and their acquired sets of knowledge contribute to an extreme range of beliefs regarding such basic concepts as what constitutes "sacredness."

In any case, the various positions of the most likely descendents and other knowledgeable Native Americans interviewed for this study, as influenced by what they have learned, may be summarized as follows.

Relationship Between Puvunga And Chinigchinich

Most feel that *Chinigchinich* was born or died at *Puvunga*, and that he was closely associated with this village as a regional lawmaker and religious leader.

One respondent feels there was no significant relationship between *Chinigchinich* and *Puvunga*.

Location of Puvunga

Three respondents feel that *Puvunga* or a portion of *Puvunga* is located at the Bellflower Property.

One respondent feels that *Puvunga* is not located at the Bellflower Property, and three feel that the village is likely not located there.

Two respondents feel that *Puvunga* is probably not located at the Bellflower Property, but also feel that enough information is currently not available to state where it is with certainty.

Sacredness of the Bellflower Property

Three respondents feel that the property is highly sacred, at least in part because they believe *Puvunga* is located there.

One respondent feels that the property is definitely not sacred, and five respondents feel that the property is probably not sacred, but all would probably acknowledge that it is sacred if convinced by new ethnohistorical and archaeological findings.

It must be underscored that the respondents in this study clearly maintain their respective positions in a passionate manner. For example, those who state that the Bellflower Property is sacred are fervent in this belief. Similarly, those who state that *Puvunga* is not located at the 22-acre parcel and that the property is not necessarily sacred are also adamant.

Conclusions

This ethnographic study has attempted to document and understand the range of Native American perspectives regarding issues relating to the relationship between *Puvunga* and *Chinigchinich*, the location of *Puvunga*, and the sacredness of the Bellflower Property. Clearly, however, no consensus on these important issues has been reached, and so the study in itself has not resolved the question of how the property should be treated. The divergent perspectives among respondents are largely due to a lack of conclusive and widely shared information.

It is the hope of the author that the respondents and other Native Americans concerned with the Bellflower Property will reach a consensus regarding its sacredness and treatment, based perhaps on findings from the exhaustive ethnohistorical research conducted for the project. Importantly, all respondents in this study also expressed extreme hopefulness that the situation can be resolved amicably. For example, the most adamant opponent to development of the 22-acre parcel, Respondent D, stated, "everyone -- each side -- has to give in and compromise a little bit," and the most adamant opponent to the position that the property includes *Puvunga* and is sacred, Respondent C, stated, "if more than six burials are found there, I would recognized this as a dedicated cemetery."

It must also be emphasized that all respondents expressed considerable sadness that this issue has evolved to such an unfortunate situation. As observed by Respondent H: "The whole situation related to the 22-acre parcel and its possible relationship to *Puvunga* should never have become political. There is no reason why anything like this should become political among the Native Americans. It just ends up hurting everyone and making the Indians look bad."

In the effort to resolve the current situation over the Bellflower Property, most respondents volunteered that the final decision regarding such matters should always be up to the closest most likely descendents of an area. Two of the five Gabrielinos interviewed for the study are members of the Gabrielino Tribal Council, and suggested that this Council should be given authority to recommend treatment of the property. All four Luisenos stated that they would bow to any decision of the Gabrielino people, with two specifying that they would recognize the wishes and opinions of the Gabrielino Tribal Council, in particular. Clearly, however, all most likely descendents and other knowledgeable Native Americans involved in this project do not recognize the Gabrielino Tribal Council as the sole governing body of the Gabrielinos.

Should the most likely descendents and other knowledgeable Native Americans not reach a consensus regarding sacredness of the Bellflower Property, and should some compromise not be reached with the University, it seems that additional subsurface archaeological investigation of the property will be justified. Any such archaeological work must involve the close involvement of the Native American community, which must ultimately be responsible for the identification of sacred items or burials and determination of site sacredness. The Native American consultants selected for such an important decision-making process should maintain moderate, objective, and open-minded perspectives regarding potential site sacredness. The consultants should also have considerable experience as archaeological monitors on cultural resource investigation projects and be well-acquainted with Gabrielino cultural materials. Finally, the consultants should maintain close communication with tribal elders, and should not be affiliated with the University.

CHAPTER 9
CONCLUSIONS

Jeffrey H. Altschul

In this chapter we will review the arguments presented, drawing conclusions when appropriate and highlighting areas still in dispute when necessary. We will engage the topics starting from the most general and proceeding to specific concerns of those active today. These topics can be divided into five categories: what is *Puvunga*?; where was *Puvunga* located?; the relationship between the ethnohistoric settlement of *Puvunga* and the archaeological record of the Alamitos Bay region; the relationship between *Puvunga* and the archaeological site CA-LAN-234/235; and what do current Native Americans believe about *Puvunga* and its relationship to CA-LAN-234/235?

WHAT IS *PUVUNGA*?

Puvunga was a Gabrielino rancheria inhabited at the time of Spanish missionization. It is quite likely that this community extended back into prehistory, although evidence to this effect is lacking. Mission records have been used to estimate a minimal population for the rancheria at the time of missionization of between 60 and 90 people; the actual population is likely to have been much higher. Marriage data suggest that the rancheria maintained strong ties to neighboring communities along the coast, particularly to the San Pedro area and the lower Santa Ana River basin.

Puvunga has been identified as the birthplace of the Gabrielino monster chief *Ouiot* and later, the God *Chingichnich* by numerous Native Americans, missionaries, scholars, and anthropologists. As early as the 1840s, Father Boscana had published an account of the native religious beliefs associated with *Chingichnich*. J.P. Harrington became interested in Boscana's account and the entire set of beliefs surrounding *Chingichnich* during the early part of the twentieth century. Harrington was aided in this endeavor by native informants, who actually took Harrington to a place they identified as *Puvunga*.

After final missionization in 1805, there is no evidence that Gabrielinos returned to *Puvunga*. Native Americans hired by Nieto, Sterns, or Bixby cannot be identified by tribal affiliation. The historic record is silent on the use of the area for Native American ritual until the *Chingichnich* festival sponsored by the Rancho Las Alamitos began in 1992.

WHERE IS *PUVUNGA* LOCATED?

Central to this debate is the issue of location. At first glance, it would seem a simple problem. Numerous scholars mention *Puvunga*, and one, J.P. Harrington, actually claimed to have visited the site. Harrington's description is not only precise, but the anthropologist also created a sketch map and took several photographs of the place he called *Puvunga*. For Harrington there is no question that *Puvunga* was located on the Bixby Ranch at the site now designated CA-LAN-306.

Why then does the controversy persist? We suggest that the problem is one not so much of geography as it is of culture. Western tradition is steeped in notions of private property. Items of value, including land, are owned by individuals or entities, and have specific spatial referents that can

be described and plotted. Thus, we speak of archaeological sites as though they are individual entities that can also be described with spatial referents that are somehow distinct from other such entities. Yet, such concepts may have been foreign to the ancient Gabrielino.

The rancheria of *Puvunga* refers to the area occupied by a set of related lineages. We can identify three levels at which the rancheria of *Puvunga* may have been recognized. At the maximal level is the general territory used by members of the lineages to gather food and other resources. White (1963) and MacCawley (this volume) argue that this area encompassed approximately 30 square miles, or about 20,000 acres. The area stretched from Alamitos Bay inland an unknown distance, covering both coast, estuary, and terrestrial resources. This area was not well marked, and the boundaries between *Puvunga* and its neighboring rancherias were probably in constant flux. At a second level, there was the set of contemporaneous settlements that housed the members of *Puvunga*. As hunters and gatherers, the Gabrielinos moved frequently throughout the year, shifting from one area to another as some resources were exhausted and others became available. At any one time, *Puvunga*, the "place of" this lineage (Earle, this volume) may have referred to a specific set of sites, the constellation of which would have changed seasonally.

Although the Gabrielino would have moved frequently, certain aspects of the settlement system were fixed. In particular the central settlement of the rancheria probably remained in one location for substantial lengths of time. This settlement would have consisted of a main core where the *yovaar* or ceremonial enclosure was housed. Here too lived the *tomayaar* or leader of the rancheria and nearby were the houses of the elites. The cemetery of the upper class and those initiated into the cult of *Chingichnich* was also located in this core area. For many people, then, this core area probably stood for and was referred to as *Puvunga*.

PUVUNGA AND THE ARCHAEOLOGICAL RECORD

The central settlement of *Puvunga* was probably located on the Signal Hill uplift. This topographic feature lies above the estuary and sites located on it would have enjoyed easy access to coastal and estuarine resources. The central core of *Puvunga* would have been located on the best land of the estuary, meaning it was close to potable water, close to economic resources, yet protected from catastrophic environmental events such as floods or storms. Surrounding the central core would have been the huts of the middle class, and even further out those of the lower class. These sites would have been dispersed throughout the uplift, as small social groups, presumably one or more familial units, would have established separate habitations. These habitations would have been placed as close as possible to water and resources. However, because these resources were not as ample and the site placement more vulnerable to the elements than those of the core, these sites were much less permanent, shifting at least every few years. The result being that over time the area around the core was dotted with small middens, remnants of previous habitation sites.

Archaeologically, we expect the central core of the rancheria to be composed of a deep midden characterized by a wide diversity of artifacts and perhaps a formal cemetery. Because we do not expect that the core was moved frequently, in contrast to the other habitation areas of the central settlement, the midden here should be quite well developed and substantially thicker than at other habitation sites. Because the core was inhabited by the leaders and the elites of the rancheria, we expect to find artifacts of greater value and status, such as exotics made from non-local materials. Finally, the cemetery of the leaders and initiated *Chingichnich* followers should be located at the core. This cemetery should be formally laid out with burials indicative of ascribed status.

To date only one site in the Alamitos Bay region fits the criteria described above. The Los Altos site (CA-LAN-270) located about one mile north of the CSULB campus was excavated in the early

1950s prior to being destroyed by urban development. Recovered from the site were a variety of shell, stone, and bone artifacts that have not been found in such numbers at other sites in the area. Further, the salvage excavations uncovered a minimum of 21 interments, much more than any other site in the Alamitos Bay region. Further, Bates (1972) argued that the flexed placement of many of the burials seemed to follow a normative pattern.

Other sites in the region may also have served as the central core. In particular, the Bixby Ranch site (CA-LAN-306) was not only identified by Harrington as *Puvunga*, but also is characterized by a very dense shell midden. Excavations at this site have simply been too minimal to characterize its assemblage.

Most of the remainder of the sites in the Alamitos Bay region are probably the remnants of habitation or areas of fish and shellfish exploitation. Upon excavation we would expect these sites to yield a sparse artifact assemblage with few exotics. Burial of the uninitiated and the slave class should have consisted of little ceremony, with the body placed close to the habitation. Over time, as these habitations were repeatedly used, we would expect to find burials placed throughout the midden but to follow no strong pattern and to be accompanied by few, if any, grave goods.

PUVUNGA AND CA-LAN-234/235

Lynn Gamble (in Ruyle 1994) has stated that CA-LAN-234/235 is among the best documented sites in Los Angeles County. Unfortunately, documentation does not necessarily mean information. After nearly 35 years of research, we still do know how big the site is, when it was occupied, or who it was occupied by? If we use Dixon's maximal size of 27.55 acres as the site size, then just over 0.1 percent (about 475 m^2) of the site has been excavated. Most of this fill has been removed from peripherial areas of the site, and most of it by mechanical means. In all, 21.75 m^2 have been manually excavated at CA-LAN-234/235, or about 0.005 percent of the entire site. There has been no radiocarbon date returned for this site, no flotation or pollen sample analyzed, nor has any diagnostic artifact been found. In reality, we know very little about this site, which may be exactly why so many widely disperate views are held about it.

Dixon (1972) has argued that CA-LAN-234/235 along with a number of other sites in the Signal Hill uplift may have at various times been *Puvunga*. Dixon's argument is that the village moved frequently in response to changes in water and resource availability and the accumulation of domestic garbage. All midden sites in the area, then, represent equivalent types of sites. In Dixon's model, each midden site should contain similar assemblages, differing perhaps only by the length of occupation (i.e., sites occupied longer should contain proportionally more artifacts).

Our notion of a central core that moved infrequently, surrounded by small habitation areas that shifted frequently is fundamentally different than Dixon's. We have argued that the central core will be characterized by a different layout and different assemblage. In our model, CA-LAN-234/235 is part of the surrounding *Puvunga* community. It should consist of a sparse midden, with few artifacts that pertain primarily to economic and domestic activities. Burials should be found throughout the midden, representing individual events and not a formal cemetery.

Both models are testable. At present, however, the archaeological data available from CA-LAN-234/235 are not sufficient to test them. Yet, of all the questions surrounding *Puvunga*, the nature of the settlement at CA-LAN-234/235 is perhaps the most readily addressed. The real question now is "should it be?"

PUVUNGA, CA-LAN-234/235, AND THE ISSUE OF SACREDNESS

The Native American community is divided over the sacredness of *Puvunga*, with the divisions mirroring the historical ambiquity surrounding *Puvunga*. For some Gabrielinos, *Puvunga* represents an area, a territory of hundreds if not thousands of acres that is sacred because it is part of mother earth. For others, *Puvunga* is represented by archaeological sites CA-LAN-306 and CA-LAN-234/235 which were hypothesized by archaeologists to be part of *Puvunga*, an assertion that has been reified in the last twenty years. For still others, historical facts are important. If *Puvunga* is sacred because of its association with *Ouiot* and *Chingichnich*, then we should find out where these dieties were prayed to and honor those sacred locations. Finally, there are those that simply disavow knowledge of *Puvunga* and claim that it has no sacred value to them.

That the relatively small number of Gabrielinos could hold such disparate views, and hold them passionately, is a reflection of the nature of their society. Today, there are four Gabrielino organizations, most of which claim to be the sole recognized body for the tribe, all of which hold separate positions on *Puvunga*. Thus, it is impossible to present "the Gabrielino position" on *Puvunga* or the sacredness of CA-LAN-234/235.

WHITHER TO?

This project has brought us to the end of the road that science can travel. We have endeavored to compile the extant historical data on the Gabrielino rancheria of *Puvunga* and to tie that data to the current archaeological record through theoretical models. Future archaeological research will test these models and no doubt refine them. We have also elicited information about *Puvunga* and its relationship to archaeology and archaeological sites from modern Gabrielinos and other Native Americans. We can report that some Native Americans believe that CA-LAN-234/235 is *Puvunga*, others are not sure, and others believe it is not.

In the end, however, the controversy over the use of the Bellflower property cannot be answered by science. In the main, the debate focuses on interpretations of the past and beliefs about the past. Most archaeologists would agree that protohistoric sites in the Alamitos Bay region are most likely associated with the rancheria of *Puvunga*. But not all these sites are equivalent. Some relate to habitation, others to the procurement of estuarine resources, and still others to the extraction of raw materials. From a scientific standpoint, the importance of these sites can be measured in relation to their ability to enhance our knowledge about the past. Such measures are codified at the national and state-levels by criteria for listing in the National and State Registers of Historic Places. Delineating and explicating scientific significance for any site in Alamitos Bay is relatively straightforward. One must be able to define extant research questions, what data are needed to address those questions, and why they believe that such data might be retrieved from the particular site in question.

The issue of sacredness, however, is far different than the question of scientific significance. There are no clear measures and no means of evaluating differences of opinion. Complicating this issue is the fact that when Native Americans were asked these questions, a wide variety of conflicting and contradictory answers were received. While we did not expect to find that everyone answered our questions the same way, the extremes in the answers are difficult to evaluate.

Part of the problem of evaluating sacredness at CA-LAN-234/235 is that the question lies at the interface between science and belief. Some of the Native American informants indicated that a site is sacred if it contained certain features, such as burials, cemeteries, or specific artifacts. Yet if we do not

conduct archaeology, how can we determine if a site contains such materials? If we conduct the archaeology, at what point do we go beyond scientific investigation and begin desecration?

Another serious issue involves the size of the property to be designated as sacred. Currently, interest has focused on the 22-acre undeveloped Bellflower parcel on the CSULB campus. But it is clear that this parcel is not isomorphic with the archaeological site known as CA-LAN-234/235. Clearly, the site extends further to the south on to the Veterans Hospital grounds. Leonard argued that the site may extend even further to the south than plotted, at one time covering portions of the golf course, parking lots, and grass fields. Similarly, Dixon has suggested that CA-LAN-234/235 may link up with sites to the north and midden traces to the east on the CSULB campus, creating a site in excess of 50 acres. Finally, the western boundary is arbitrarily drawn as Bellflower Road. Yet, the site almost assuredly extended into Bellflower Road. Anecdotal evidence exists of private homeowners to the west of Bellflower finding artifacts in their yards. Thus, it is quite possible the site exists under the subdivision to the west.

Part of the problem in discussing CA-LAN-234/235 is that the site has only been subject to a relatively small amount of testing. Site boundaries are based almost exclusively on surface observations, and much of the excavation conducted on the site is the subject of controversy. Archaeology can inform on the question of site boundaries. The question of whether the entire site should be considered sacred or only a portion, however, is not one of science, but more properly falls into the domain of public policy.

Our work cannot answer these types of questions, which must be resolved in a public forum. What we do hope, however, is that our work has provided a better understanding to all parties about the nature of *Puvunga*, the archaeological record, and current Native American beliefs about the pertinent issues. Hopefully, this information will be useful in bringing the two sides in this controversy together. But regardless of the short term outcome, we trust that our report will allow future generations to understand the historical context surrounding *Puvunga* and provide them with a firm building block for further investigations on the subject.

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APPENDIX 1

POPULATION, MARRIAGE, AND SOCIAL ORGANIZATION AT PUVUNGA: AN ANALYSIS OF MISSION SACRAMENTAL REGISTER AND OTHER DATA

David D. Earle

Population, Marriage, and Social Organization at Puvuŋa: An Analysis of Mission Sacramental Register and Other Data

David D. Earle
Earle and Associates

1. Introduction

This study intends to review and analyze population, marriage, and family structure information concerning the Gabrielino-speaking community of Puvuŋa in southern Los Angeles County. This information has been principally obtained from Franciscan mission records which recorded baptisms, marriages, and burials of native converts at Missions San Juan Capistrano and San Gabriel Arcangel. Many inhabitants of the community of Puvuŋa were baptized at these two missions, particularly during the last two decades of the eighteenth century. The information obtained from the mission records allows us to discuss the size of the native population at Puvuŋa at Spanish contact, as well as patterns of marriage and other aspects of native social organization. In this analysis we have reviewed the techniques which have been used to analyze partial or fragmentary data on population and family structure. We have also attempted to place the population and social organizational characteristics of Puvuŋa within a wider regional perspective.

2. Reconstructing Native Population Characteristics at Spanish Contact

2.1 The Study of Native Population History in Southern California: The Sources.

Discussion of the magnitude of native populations in California at Spanish contact has followed a sort of double history over the last century. In the first place, the discussion and debate over both Hispanic and (Anglo) American treatment of the native peoples of California has included attempts to estimate population magnitudes at the beginning of European rule as well as subsequent decline. Late nineteenth century authors discussed the causes of population decline as they observed it, offering recommendations on what official action might be taken to protect remaining native communities. From the beginning of American rule the issue of the plight of native peoples was tied up with questions of how what we would today call colonial policy had prompted population decline. This latter issue of policy towards native peoples was even then perceived as shedding light on the problem of reconstructing the original size of such populations. The commentaries of Reid (1926), and official reports such as those of Benjamin Wilson in the 1850s (Caughey), and Helen Hunt Jackson in the 1880s commented on population decline among Takic-speakers in southern California. For the Gabrielino, Reid even offered a rough estimate on the numbers of Gabrielino villages that had been occupied at the time of the

Spanish conquest. The first attempt at a general estimate of California native population was carried out by Powers in the 1870s (Powers 1877).

These early discussions were developed during an era when the basic facts of the Spanish conquest of the New World were well enough understood by the educated. However, our knowledge of native New World community organization, labor modalities, and demographic dynamics at contact and afterwards has been greatly expanded by historical and anthropological research undertaken during the present century. This new research has provided a wider context for undestanding events in California as part of a pan-hemispheric demographic and sociopolitical process. The recent observance of the 500th anniversary of the invasion of the Western Hemisphere has heightened, if anything, our awareness of the common elements bound up in the "encounter" between native peoples and Europeans throughout Hispanic America.

This process was characterized by Spanish military conquest of strategic areas, the important role of Church representatives in administering native peoples, the development of pastoral and mining economies, and the use of native labor as the basis of colonial economic activity. While native communities were integrated directly into the imperial administrative apparatus, the limited reach of Spanish military or police power meant that internal frontiers existed in many of Spain's New World domains. Native peoples thus sometimes could flee to areas beyond effective Spanish administrative control.

Early in the twentieth century the development of historical research on colonial Spanish America, propelled in part by University of California Berkeley historians Ralph Bolton and Herbert Priestly, led to a flowering of academic interest in California's Hispanic past. This was manifested by a concern for evaluating the mass of civil and ecclesiastical documentation created during the eras of Spanish and Mexican rule. A particularly important element of this documentation for purposes of native demography was the body of Franciscan mission sacramental registers kept at various of the missions in California between the dates of their founding and the 1830s. These registers contained entries recording the baptisms, marriages, and burials of native people brought into the various missions as converts to Catholicism.

These sacramental registers were first worked with seriously during the second and third decades of the twentieth century. Estella R. Clemence carried out transcriptions of apparent village names in various of the registers in circa 1919-1920 (Merriam 1968; White 1963:106-107). Some of her work was incorporated into the series of mission histories published by Father Zephryn Engelhardt during the 1920s (Engelhardt 1921, 1922, 1927). Additionally, Engelhardt prepared tables of native neophyte baptisms, marriages, and burials for these mission histories, based on research in the relevant sacramental registers. Smithsonian ethnographer John Peabody Harrington, working in southern California during the teens and twenties, also began to use village names derived from these sacramental registers in his interviews with elderly native peoples dealing with placenames (Harrington 1986: Reel 103).

Kroeber, writing in the 1920s, noted the potential of this data source for native demography and political geography, but cautioned that very painstaking analysis would be required to make the

material useful (Kroeber 1925:881). During the 1930s Sherburne Cook became interested in the applicability of this material to the problem of native population decline in California. He produced a series of monographic studies intended to outline the true magnitude of native population loss under the regime of the Franciscan missions in California (Cook 1976). He meant to call into question the rosy picture of mission life painted by Engelhardt and other church apologists during the heyday of Mission Revival romanticism in the 1920s.

Cook set the stage for modern studies of native demography and population change in California and Latin America. His California research provoked howls of protest from defenders of the Church, however. He was able to demonstrate, on the basis of the very records of the Franciscans themselves, that concentration of native communities into unsanitary and over-crowded mission compounds led to high native mortality and a failure to reproduce. Cook and his later collaborator Woodrow Borah went on to carry out similar analyses of contact population and subsequent demographic decline in many other regions of Hispanic America, revolutionizing our understanding of pre-conquest population magnitudes in the Western Hemisphere. Throughout his career, as we shall see, Cook continued to work on refining his estimates of native population in California (Cook 1976)

This developing use of mission sacramental register data, however, continued to suffer from limitations hinted at by Kroeber. The difficulties encountered in interpreting native placenames, the so-called "ranchería" or village names given as places of origin of native mission recruits, continued to pose serious problems. White, writing on Luiseño social organization, recounted one early failed attempt to carry out computerized analysis of mission register data in the 1950s (White 1963:105).

However, beginning in the 1960s, progress began to be made in this area, for several reasons. First of all, the research field notes of ethnologist John Peabody Harrington, who died in 1961, gradually became available to researchers interested in native place names. These provided a wealth of information on the location, linguistic structure, and meaning of many southern California place names. In addition, the development of the field of historical demography as a discipline in Europe and Latin America provided both a theoretical foundation and computer-aided techniques for deriving population analysis from church sacramental records. Finally, the experiences of historians and anthropologists in working with similar issues of native-European "encounter" elsewhere in Hispanic America proved an important stimulus to a new sort of collaboration between anthropology and history in California. This collaboration was reflected in the treatment of native population history in California as a problem relating not only to the historical experience of the Spanish Borderlands but to that of Latin America as a whole.

In addition to mission register materials, another fundamental source of native population information has been what can be called "explorer's accounts". These sources include the accounts of Spanish seaborne expeditions which visited southern California before 1769, particularly that of Vizcaino in . The diaries and accounts left by the Portolá expedition in 1769 and 1770, when southern California came Spanish control, are also a fundamental source of information. The account of Father Crespí, a member of this expedition, was translated and

published by Herbert E. Bolton in 1927 (Bolton 1927). Alan Brown has retranslated this diary, since the original translation contained a number of limitations from an ethnohistorical point of view, and has made manuscript versions of this available to some researchers. In addition, the diary accounts left by Ensign Miguel Constansó and Don Gaspar de Portolá, also members of the expedition, have also appeared in English and Spanish versions (Constansó 1992).

Subsequent to the period of initial exploration in 1769-70, other expeditions visited interior areas of southern California. Some of these were formal journeys of exploration, as in the case of the travels of Father Francisco Garcés in the southwestern Mojave Desert (upper Mojave River, Antelope Valley) and the southern San Joaquín Valley in 1776 (Coues 1900, Galvin. Later forays into the interior were often military expeditions intended to recover runaway native neophytes who had fled the missions (Cook 196Cutter 1950; Earle 1992; Nuez 1819). The diaries of these latter expeditions have sometimes survived, and provide important information on population magnitudes for native communities visited.
These accounts are of great importance to the development of native population estimates, yet their analysis has heretofore been an underdeveloped field. This has been due partly to the diffiicultiies imposed by the need to translate or re-translate documents from Spanish paleographic originals. In addition, the interpretatipon of the documents requires considerable local knowledge about both Spanish/Mexican and native lifeways, so both historians and anthropologists who have approached these materials have been confronted by limitations in their various backgrounds. In addition, the partial loss of Spanish and Mexican era documents caused by the San Francisco earthquake and fire of 1906 has sometimes neccessitated a complex backtracking to various repositories inside and outside of the United States to locate duplicate or parallel copies of lost documents (Beers 1979).

In addition to these exploration accounts and the mission sacramental registers, other Spanish and Mexican era sources have also contributed to our growing knowledge about native population and settlement in southern California at Spanish contact. Principal among these are civil judicial documents dealing with land grants, which refer to the location of native settlements. Administrative correspondence, both civil and ecclesiastical, also provide useful information on native settlement and population at different points in time.

2.2.1 Native Population Magnitudes and The Spatial Distribution of Population

The analysis of native population characteristics at the moment of the Spanish invasion involves two related issues. First, the formulation of a working definition of the native "communities" mentioned in our sources in terms of typical structure and function. When mission sacramental registers or explorer's accounts mention native settlements- "rancherías"- what kind of social and residential unit is being described? Since our sources invite us to treat the "ranchería" as a unit of population analysis, we need to be as conceptually clear as we can about what we are working with. We need to determine whether such settlements are seasonal or permanent and what kinds of territorial, political units their inhabitants may be associated with. The place of such

settlements in a wider scheme of social and political organization must be determined. In short, we seek to develop a general definition of the "ranchería" within the context of native social, political, and economic institutions.

Secondly, we must determine how the "ranchería" data we glean from our various sources on community populations may relate to actual community population levels. In this report we will have an opportunity to discuss this issue in some detail. A key element in our recent attempts to calculate native community population magnitudes has been the development of new approaches to this problem. These approaches include the use of age-sex population structure models and the application of family reconstitution techniques. These methods recognize that the population data obtained from mission sacramental registers is, in the case of coastal Los Angeles and Orange Counties, often only partial. Nevertheless, even this partial information can yield inferences on what original population levels may have been at Spanish contact.

Thus our analysis must deal with 1) the development of community-based estimates of population and 2) the placing of community populations in the wider social and political scheme, including the wider regional settlement system. We now turn to the second of these issues as we review the development of various approaches to estimating native community populations in southern California. The problem of defining the "ranchería" as a social and residential unit is taken up in a later section.

2.2.2 Estimating Population Magnitudes

The development of community population estimates at Spanish contact in southern California has had as a starting point a consideration of two related issues- the reliability of explorer's accounts and the trustworthiness of mission sacremental register data. These issues have been important for recent work on population reconstruction among Chumash populations in Ventura and Santa Barbara Counties. Since the study of mission register data has been most thoroughly advanced in the case of the various Chumash groups, a discussion of these problems in relation to this Chumash research is instructive.

In the case of the Chumash, estimates of community populations along the Santa Barbara Channel made by members of the Portolá expedition in 1769-1770 provided a point of departure for population analysis. A comparison was made by Brown (1967) between these counts and later Franciscan mission baptismal totals for the same communities. On this basis, Brown was able to calculate for Santa Barbara Channel Chumash communities a general ratio of 1.96:1 for expedition-reported population relative to later mission baptismal totals. This ratio indicated a substantial decline in native population between initial contact and missionization. This was attributed by Brown to the impact of introduced diseases. Johnson (1988:112, 114) reviewed this argument and indicated his reservations about the reliability of reported contact-era population counts along the channel. He also questioned the attribution of such a pronounced early colonial native population decline in that area to the severe early impact of introduced diseases.

The reliability of sacramental register information as an indicator of village population magnitudes at Spanish contact remains a point of debate. This approach depends on two assumptions. First, contact population must bear some significant relationship to population magnitudes some twenty or more years later during the period of missionization.

Secondly, in counting community populations at the time that communities were missionized, the baptismal, marriage, and death registers must have recorded a significantly large percentage of the populations in question. This means that the missionization process absorbed the great majority community members into the mission system. If significant and variable percentages of native populations escaped being counted, this presents a serious gap in coverage. Where such closure in the population system being counted was not the case, more indirect methods of population reconstruction must be used.

The issue of the extent to which such closure did obtain in various regions of southern California is only beginning to be addressed. John Johnson (1986) is one of the few Californianist scholars to have addressed this problem, and his work had been groundbreaking for southern California. He has analyzed the process of "reduction" of the Chumash population of Santa Barbara County after 1783. Significantly, Johnson undertook an innovative project of family reconstitution of nuclear family units whose members appeared in the sacramental registers of Franciscan missions in this area. This painstaking process of identification of component members of both family units and of communities allowed Johnson to estimate the degree of completeness of demographic coverage of the mission registers. Johnson concluded that by the year 1806 the Chumash population in Santa Barbara County had been effectively absorbed into the mission system. That year apparently marked the reduction of remaining portions of Chumash villages in mass roundups organized by the Franciscan fathers.

Johnson has concluded that almost all of the Chumash population had been absorbed into the mission system by that date. He has noted that an assumption of near complete closure for the Chumash population is justified, given that he did not find evidence of portions of ranchería populations having taken up residence at Spanish estates or large-scale flight. While some individuals may have fled into the interior across the frontier of Spanish control, he does not see this as a major demographic factor.

Another researcher, Jackson (1988) has cautioned that in California generally either flight from the missions or pre-baptismal population loss may have affected the conditions of closure. He mentions two principal possible alternatives to reduction to the missions which may have existed in California, at least in some areas. The first of these alternatives is flight across the frontier of Spanish control. It has become increasingly clear in studies of colonial Latin American native demography that such transfrontier flight was often an important source of population loss in indigenous communities under Spanish control. A second possible cause of absence of population from missionary records is the absorbtion of native community members into privately-held estates as laborers. This was also a common pattern in colonial Latin America.

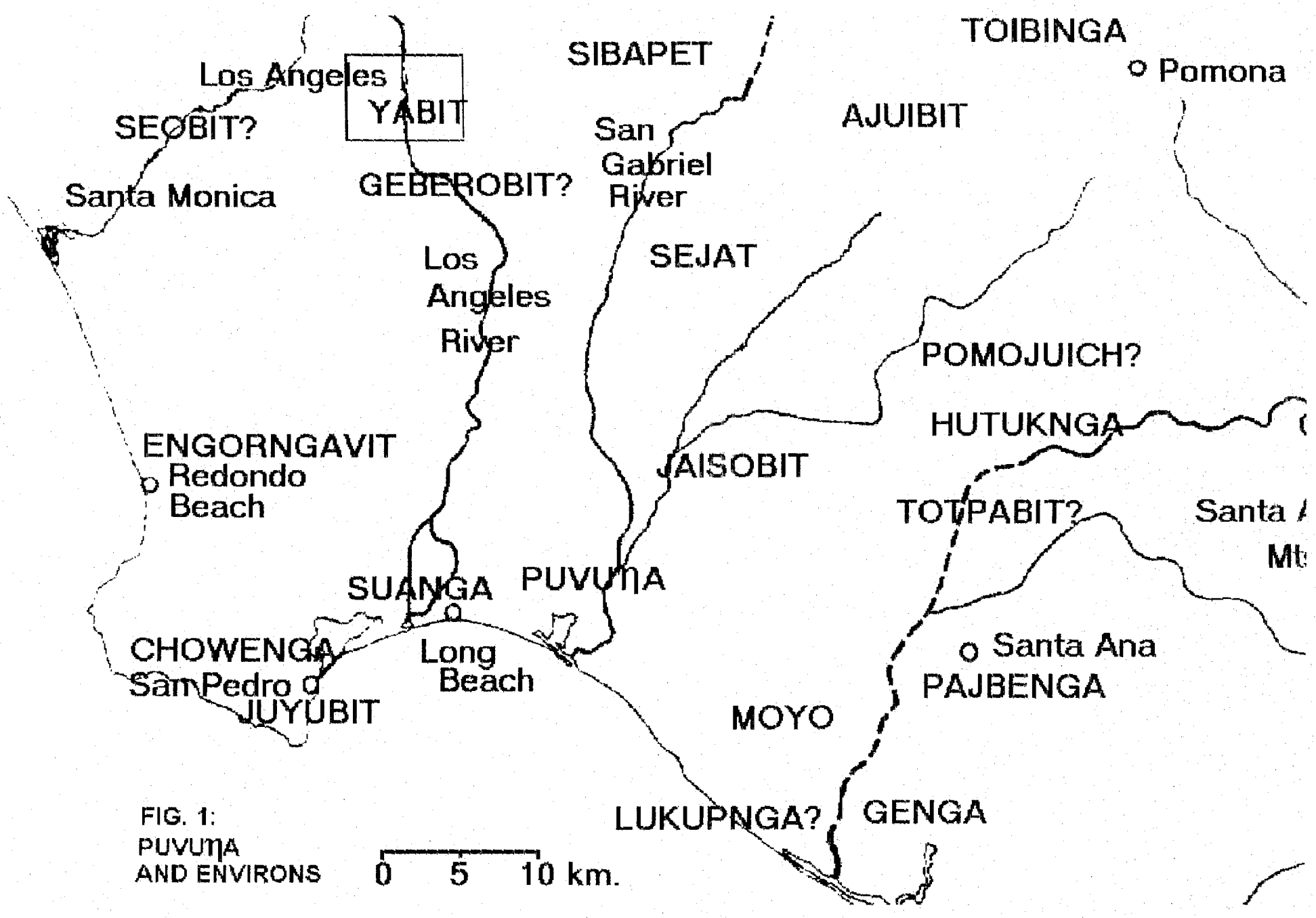


FIG. 1:
PUVUNA
AND ENVIRONS

As Johnson has mentioned to me in a personal communication, some conditions approximating those of flight and of estate labor appear to have existed to some extent in the Los Angeles basin area. This situation seems to contrast sharply with that obtaining among various Chumash groups. Johnson's data clearly indicates the degree of intactness of household population data for his Chumash communities. In addition, the fact that many Chumash communities were brought in or "reduced" to the missions en masse increases the reliability of inferences on relative absence of flight made from the data.

The possible magnitude of pre-baptismal population loss is the other major point of debate we have mentioned in the consideration of the representativeness of our sacramental register data. Two possible sources of population loss have been mentioned. First, population decline in the first years after the Spanish invasion of 1769, due to introduced European diseases and attendant social disorganization. Second, the possibility of severe declines in California's native population decades, even centuries, before 1769 on account of the spread of epidemic diseases to California from areas already under Spanish control. Because of the importance of these issues, we discuss them in some detail here.

2.2.2.1 Pre-Contact Population Loss and the Debate Over the Depopulation of North America.

The inference that historically-reported native population magnitudes in California may have little connection to those of prehistoric times may be derived from the work of a school of historical demography which claimed increasing attention during the 1980s. Henry Dobyns and other scholars concerned with the historical demography of indigenous North America have put forward a broad critique of previous estimates of native populations for the continent (Dobyns 1983; Ramenofsky 1987). This critique has endeavored to adjust Kroeber's 1939 estimate of 900,000 inhabitants for the aboriginal United States and Canada in 1492 upwards to some 18 million (Kroeber 1939; Dobyns 1983). As Ramenofsky notes:

> Ethnohistorians... and historical demographers.... envision an entirely different sequence of events [from traditional ethnologists] during the contact period. They assume infectious diseases, a major cause in the destruction of aboriginal populations, reached regional groups decades, if not centuries, prior to historical documentation. Consequently, even the earliest census counts may describe populations as much as 95% reduced from precontact maxima; precontact estimates must then be orders of magnitude larger than postcontact counts [Ramenofsky 1987:1].

This critique is based on the idea that infectious European diseases were carried northward out of Mesoamerica from as early as the great pandemic outbreaks of the early and mid 16th century. According to these scenarios, diseases such as measles, smallpox, and typhus would have crossed the Spanish borderlands of the southern United States at an early date, diffusing northward to native populations located far from apparent European influences. Smallpox and measles are suspected of having spread in tandem during the 16th century pandemic. The relatively long

incubation period of both diseases- typically over 10 days- contributed to their capacity for rapid spread (Burnet and White 1972:122-123).

The implications of such a scenario for the population history and prehistory of California would be earthshaking indeed. In the case of southern California, here have been several reported possible references to epidemics before 1769, as Koerper (1991:2) notes. The testimony of Pablo Tac, Luiseño neophyte, has been cited on this point, but his reference to a decline in Luiseño population from 5,000 to 3,000 clearly postdates Spanish contact, as he elsewhere mentions a population of 5,000 when Mission San Luis Rey was founded (Tac 1958:13, 19). The mention in Librado (1981:11,99), of epidemics among the Chumash which were possibly pre-contact, is too vague to be of much use. Walker, Lambert, and DeNiro (1989:358) discuss the possible introduction of European diseases into California via ships engaged in the Manila trade or by way of land routes from Mexico, but they present no firm evidence. Borah (1992:15) also speculates on the possibility, but notes the current lack of hard evidence. Sherburne Cook, in his 1978 overview of California historical demography, also mentions no identifiable decline in native population before 1769 (Cook 1978: 91).

We do know that Spanish ships did occasionally make landfall in California before that date, as accounts this author has inspected in the Archive of the Indies in Sevilla, Spain, make clear (see Chapman 1919). It is also clear that the native peoples of southern California were in regular contact with Colorado River groups such as the Mohaves, and also with the native inhabitants of the Southwest. The references made in the diaries of the Portolá expedition to apparent native claims of prior knowledge of people like the Spaniards may not have been too far fetched (Bolton 1927:139, 151). The expedition also reported finding fragments of broadswords, iron, and wrought silver among the Chumash, claimed to have been traded in from the east (Constansó 1992:xxxi).

This having been said, some epidemiological realities need to be pointed out. Sporadic incidental contact is one thing, and constant intercourse quite another as far as the introduction of epidemic or endemic diseases is concerned. As the history of the spread of pandemics of measles, smallpox, typhus, and other diseases in Latin America in the 16th century demonstrates, the outbreak of disastrous major epidemics did not invariably occur as soon as contact between European and native was achieved. In the case of the northern Andes, the epidemiological history of which this author has researched intensively, major pandemics were not reported until some 20-25 years after the Spanish conquest (Earle 1992; Villamarin and Villamarin 1992:118-119). In the first decades of the Spanish conquest of Colombia, for instance, the importation of African malaria as an endemic disease into lowland areas may have had a greater effect on native population loss than the introduction of epidemic diseases from Europe.

The post-1769 history of smallpox in California suggests that in historic times the disease did not become a real problem for the native population until many decades after the Spanish conquest of California. Sherburne Cook's thorough review of this issue, which first appeared in 1939, concluded that from initial conquest until 1828 Upper California escaped significant outbreaks of smallpox, at a time when other parts of the New World were being seriously affected (Cook 1939). While the disease was a severe problem for the missions established in Baja California

during the eighteenth century, we have been able to find as yet no direct evidence of its establishment in California before the nineteenth century. It is possible that a mild outbreak might have occurred around 1781, since Cook reports that infants brought by settlers to Los Angeles in that year were infected by it, pesumably in connection with the epidemic then raging in Baja California. A statement attributed to Governor Arrillaga in 1806 also hints that smallpox may have existed in California in the early 1780s, or at least the threat of it (Cook 1939:155, 170). Nevertheless, we have no other evidence on smallpox at that time or subsequently until 1828. It thus does not appear to have been a significant factor in population loss at the southern California missions during their early decades of existence. Sherburne Cook comments on the contrast between the experience of Upper and Lower California in this regard in the era of the missions:

> Of true epidemics carrying off hundreds or thousands in a few weeks or months there were remarkably few in Upper California. In fact, there was only one of really great extent, and perhaps two of moderate intensity. This situation contrasts forcibly with that in Lower California where at least five serious epidemics occurred within a comparable period of time. [Cook 1976:17-18]

Cook goes on to attribute this to both the very small flow of human traffic into Upper California and the vigilance of military and ecclesiastical officials. He describes a pattern for the missions as a whole of high susceptibility to endemic diseases, including syphilis, which led to high mortality in the absence of devastating pandemics. Nevertheless, he comments that the relative population loss due to endemic and epidemic disease was about the same in Upper and Lower California. He notes that while in the early decades of the existence of the missions, those neophytes who survived the unhealthy conditions there represented an increasingly resistant population. This population was constantly being replenished, however, with newly arrived converts with little resistance and high risk of death. Once the flow of converts began to slow in the second decade of the 19th century, however, the degree of resistance of the neophyte population to European diseases they had been exposed to increased. In a subsequent section of this report dealing with the reconstruction of community native population magnitudes, we discuss Spanish Conquest era epidemiological issues further.

Cook observes that diseases such as measles, smallpox, and cholera, being late arrivals on the Upper California scene, respected neither mission nor non-missionized native people when they struck (Cook 1976:17-18).

The first known outbreak of smallpox occured in 1828-1829, and affected San Juan Bautista and other missions south of San Francisco. A second outbreak, centered in Sonoma, occured in 1837-1838. Both of these appeared to have come ultimately from foreign vessels. Neither had any real impact on southern California. A third epidemic, in 1844, also originated with a ship at Monterey, and did manage to spread to southern California (Cook 1939:177-178, 183-191). These cases indicate that sea commerce was the critical vector in the spread of this disease. This in turn suggests why California had remained largely free of the disease, given the small amount of sea traffic coming into California waters before the 1820s.

Major epidemics of smallpox occurred in southern California in 1844, 1862-63, and 1875 (Strong 1929:7,113, 146,151,154,174,238). The latter two outbreaks were particularly severe, killing thousands of native people in southern portion of the state. The 1862-63 epidemic was truly a disaster as far as the survival of functioning native communities in southern California was concerned. Harvey, in discussing population decline among the Luiseño in the 19th century, offered the skeptical comment that:

> The causes behind the Luiseño population decline after the American occupation of California are many and complex. Traditional explanations, such as epidemics, seem ungrounded. The small pox epidemic of 1862-63 was greatly exaggerated at the time, insofar as its effect upon the native populations in southern California are concerned, but it has continuously received the blame (Harvey 1974:13)

Despite Harvey's presentation of comments by Benjamin Hayes about the negligible impact of smallpox to native people south of Temecula, it is not accurate to generalize that the 1862-63 outbreak was not devastating in southern California. In discussing the history of Cahuilla interaction with non-native peoples during the nineteenth century, Bean (1978:584) called this epidemic "the greatest blow to Cahuilla culture and society" during that era. He presents population estimates indicating that the Cahuilla population declined by two thirds between 1860 and 1865. Testimony by Cahuilla, Serrano, and Juaneño consultants interviewed by Strong and by Harrington confirm the severity of population loss. It was mentioned that the native population of San Juan Capistrano was decimated by this epidemic outbreak (Harrington 1986; Reel 115: Fr.176-177, Reel 122: Fr.140).

The worst episodes of smallpox followed the opening of California to the world during the Gold Rush. The historical lateness of smallpox's impact on native groups in southern California suggests that it was not a disease easily introduced into the region by sporadic as opposed to sustained human traffic.

Taking these points into consideration, our argument on pre-contact depopulation of California can be stated as follows. We have, in the first place, no evidence to suggest that smallpox had ever been introduced into California prior to Spanish contact. When, in fact, it did work its ravages in the 19th century, the native population was affected to such a degree as to suggest the "virgin soil epidemic" phenomenon- that is, no previous recent exposure to the disease. While we cannot totally rule out possible early epidemic intrusions in the 16th, 17th, and early 18th centuries, it appears that the disease was not known nor remembered in California in the late18th century. We have no native testimony to that effect, nor any accounts of exploration which describe native people marked by the distinctive scars of healed smallpox lesions.

Documentary evidence also suggests that measles, often associated with smallpox outbreaks, was also not prevalent in southern California until the early 19th century. A note which appears in the Mission San Juan Capistrano register of burials at the beginning of 1806 says "In this year there came here for the first time the measles, unknown among these native people" (Mission San Juan Capistrano 1777-1915, Register of Burials... , Fol. 125v). The 1806 measles outbreak was

generalized throughout the California missions, and was the most serious epidemic to occur in mission times.

We would also argue that even if smallpox had struck on one or a few occasions during the 16th or 17th centuries, which we doubt, its long-term impact on native population levels by the late18th century would still not have been such as to cause a long-term depopulation of the region. This argument is based partly on demographic modeling research on small "anthropological" populations (Weiss 1975; Weiss and Smouse 1976). This work has focused on the demographic processes tending to re-establish normal population distributions after disturbances such as epidemics, warfare, famine, and so on. The fertility and mortality feedback effects of population density are shown to account for processes of population re-establishment after periods of crisis. These stabilization processes would in the California context probably have been most frequently manifest in population responses to drought episodes. The key argument here is the following. One or even several epidemic infectious disease episodes that do not form part of a long-term periodically repeated outbreak cycle will permit, over a limited number of generations, the reestablishment of pre-crisis population levels.[26]

It is clear that such a cycle of endemicity was not established in California. But in addition, we would also expect that if smallpox , for instance, had struck California with any frequency during the 1520-1769 period, frequently enough to have materially depressed the size of the native population over the long term, then the surviving native population would have been less severely impacted by it in the 19th century. In general, while epidemics affecting the native population of Latin America in the 18th and 19th centuries were often serious, they did not have the catastrophic dimensions of earlier episodes (Borah 1992: 7-10; Sanchez Albornoz 1974:118-119). It has been frequently empirically observed that after previously unexposed populations have been repeatedly exposed to and decimated by virulent infectious diseases, their successive descendants gradually develop less virulent reactions to these diseases. This conversion, within the same population, of so-called "virgin soil epidemics" to less virulent outbreaks with the passage of time has led to various attempts at explaining declining virulence.

One approach argues that exposure and natural selection over the course of a number of epidemic episodes will increase the effective long-term adaptedness of the surviving population gene pool to the disease. Considerable debate has developed in epidemiological circles over the mechanisms of this possible selection driven adaptation to disease (Burnet and White 1972:142-143; Cockburn 1971:51-52, 54). Nevertheless, it is clear that such a process does occur.

It should be pointed out that neither the archaeological record nor the 16th and 17th century visits to southern California by Spanish explorers indicate long-term depopulation of the region nor evidence of sharp cultural discontinuity during the 1520-1770 period. Deculturation, a key element in the revisionist argument, is clearly more difficult to detect than depopulation. Nevertheless, the characteristics of social organization, religious institutions, material culture, and inter-group interaction in southern California in 1769 do not suggest a recent era of culture loss. The full functioning of patrilineal corporate kin groups might not be anticipated, for instance, if the region had undergone a population-collapse induced loss of cultural memory.

The above considerations cannot yet be considered to be entirely conclusive. They do, however, strongly suggest that the Dobyns hypothesis about pre-colonial native depopulation does not apply to the southern California case.

Our discussion of the history of smallpox in California also highlights another important point. While even the non-specialist public now recognizes that the factor of introduced disease was somehow implicated in the decline in native population after 1769, the popular imagination tends to envision a "black death" scenario. Yet what Cook's work and subsequent scholarship have suggested is that devastating epidemics involving the usual gang of suspect disease vectors were not an important factor in the late eighteenth century in California. They had been in Baja California, but were not in Alta California.

Where does this leave us as far as pre-baptismal native population loss is concerned? Research done both in the Chumash area and in Los Angeles and Orange Counties suggests that population loss, particularly among the juvenile population, could be an important factor for native communities even before they were moved to the missions. Yet this population loss appears not to have been a product of severe epidemics, and the tempo of population loss would increase once populations were moved to the mission compounds. We can thus generalize that we should not assume a priori that communities suffered very substantial population losses during the first ten years of Spanish rule due to epidemic disease. Some loss did occur, compounded by other factors of flight and disorganization, but Johnson is correct to be cautious in evaluating the implications of such population loss for population estimates.
In our subsequent discussion of native mortality and the mission system, we will have a chance to compare pre-mission and mission mortality more closely.

In the next section we review the alternative methods available to reconstruct native community populations using the principal data sources mentioned above. It is important to keep in mind the possible impact that the factors of flight or migration from the community and disease mortality may have had on community populations after 1769. We thus would want to pay particular attention to whether the methods described here have attempted to come to grips with these issues.

3.1 Estimating Populations in Coastal Southern California

We have discussed above both explorers' accounts and mission register information as fundamental sources for estimating native populations at contact. Each of these types of data has presented problems of intrerpretation. Keeping these considerations in mind, it is enlightening to review the kinds of population numbers that have been put forward for this ethnographic area.

3.1.1 Population Estimates and Population Densities in Pre-Conquest California

Since the 1870s a number of pre-contact population estimates have been proposed for California. These include those of Powers (1877) [705,000], Merriam (1905) [260,000], Kroeber (1925) [150,000], and Cook (1978) [280,000-340,000]. Kroeber's conservative 1925 estimate, as Baumhoff (1963:159) points out, was called into question by Meig's (1935) calculation of a new population estimate for Baja California on the basis of Spanish mission records. As Kroeber (1939:179) acknowledged, if Meigs' estimate of population density for Baja California, higher than Kroeber's for California, were correct, Kroeber's estimate was too low. Careful work by Cook also using Spanish records and other ethnohistorical sources yielded new higher estimates more in consonance with the Baja California data.

Cook (1978:91) reconstruction provided an estimate of 20,000 persons for the total southern Califonia region, including the following groups- Kawaiisu, Kitanemuk, Tataviam, Serrano, Cahuilla, Gabrielino, Juaneño/Luiseño, Cupeño, Ipai, and Tipai. Other individual estimates for these populations appeared in the 1978 Handbook of North American Indians volume dealing with California (Volume 8):

Tataviam- 1,000
Kitanemuk- 500
Kawaiisu- 500
Gabrielino- 5,000+
Juaneño-Luiseño- 5,000-10,000
Cahuilla- 6,000-10,000
Serrano- 1,500-2,500
Cupeño- 750
Tipai-Ipai- 3,000- 9,000?

These figures, while only very approximate, do appear to be reconcilable with our as yet imperfect knowledge about the number and size distributions of villages in each language region. They yield a total population of 25,000- 30,000 for all of these groups, higher than Cook's 20,000.

In the case of the Juaneño and Luiseño, Kroeber was willing to concede them pre-conquest populations as high as 1,000 and 4,000 respectively (Kroeber 1925:649). He noted a 1856 U.S. Government report placing the population of surviving Luiseño rancherías at at least 2,500. This latter circumstance is an indicator that Kroeber's estimate for the Luiseño can be considered an absolute minimum, given what we now know about population decline between 1769 and the 1850s. This situation is similar to that for the Cahuilla. The 1860 federal census listed over 3,000 inhabitants of predominantly Cahuilla settlements reached by the census takers in San Bernardino County, indicating that the 1769 population for this group would have been substantially larger than that, probably 6,000 at a minimum (Bureau of the Census 1860).

For the Gabrielino, Kroeber's discussion of southern California groups in 1925 did not hazard a guess on their population. If we take Reid's estimate of forty Gabrielino rancherías as a

minimum, it can be seen that the 5,000+ population figure proposed by Bean and Smith (1978) is not unreasonable.

The matter of calculating pre-contact population densities for regions of either Upper or Lower California has been taken up by Aschmann (1959), Baumhoff (1963), and Meigs (1935), among others. Such densities in southern California run a gamut from near zero to hundreds per square kilometer in an area such as the Goleta Slough, inhabited by the Chumash.

3.1.2 Population Density

Microenvironmental variability across the landscape makes the use of statistics on population density per land area a very approximate analytical tool. In general terms the size and number of native communities provides a better index of density of occupation, since density per land area estimates can be manipulated through decisions about placement of boundaries. We have developed density estimates for both the San Juan Canyon region and the lower Santa Ana River drainage. These permit population density comparisons with other regions within California.

Our first estimate was developed for a 15 by 15 mile [24 by 24 km.] (225 square mile [360 sq. km.]) area centered at the San Juan Capistrano mission (see Figure 2). It included 11 identified rancherías. The boundaries of this area were deployed so as to reflect what would be a realistic approximate spacing of ranchería territories vis a vis neighboring communities. Using our Estimate A community population values we derived a population of 810 persons and a population density of 3.6 persons per sqare mile [2.25 persons per km.^{2}]. Our Estimate B population values, generally higher, yielded a population of 1100 persons and a population density of 4.9 persons per square mile [3.1 persons per km.^{2}].

Our second estimate is for the lower Santa Ana River drainage. Within an area 12.5 miles by 20 miles [20 km. by 32 km.] four rancherías were located- Genga, Pajbeŋa, Totpabit, and Hutukŋa. Our Estimate A values for these rancherías yielded a population of 2.6 persons per square mile [4.16 persons per km.^{2}]. Our Estimate B values for these communities yielded a value of 2.8 persons per square mile [4.5 persons per km.^{2}].

This ranchería series for the region may be incomplete, since we have excluded the settlement located opposite Genga, commonly identified as Lukupnga. If that is included, with a population estimated at 70 individuals, the population density becomes 2.9 persons per square mile [4.7 persons per km.^{2}].

These values are extremely approximate because of the uncertainties associated with both the assembly of regional population estimates and the assignment of areas of territorial occupation to individual rancherías. How do they compare to population density estimates derived for other areas in California?

Baumhoff (1963:223) has presented a summary of values for central and northern California, based on his own research. He indicated that the Lower Klamath region in northwest California,

as well as the coast range region extending south from San Francisco Bay to northern San Luis Obispo County, had population densities of from 3 to 5 persons per square mile [4.9-8.1 persons per km.^{2}] during the Late Prehistoric. The Mendocino coast and Sonoma regions north of San Francisco were characterized by higher densities- from 5 to 7 persons per square mile [8.1 -11.4 persons per km.^{2}]- as were the Sierra foothills. The highest densities of all- 10 or more persons per square mile [16.3 or more persons per km.^{2}]- were found in the river and slough systems of the central and northern San Joaquín Valley. The non-riparian portions of the valley, as well as the higher elevations of the Sierras and the southern end of the San Joaquín basin, had densities below 3 persons per square mile [4.9 persons per km.^{2}].

For the Chumash, several population density estimates are available. A fitting of Cook's (1976:91) figure for the several divisions of Chumash-speakers - 18,500- to the total territory for these groups yields an value of approximately 3.9 persons per square mile [6.3 persons per km.^{2}]. Tainter's population density estimates for Chumash in the Santa Barbara Channel region covered the Channel Islands, the coast, and the coast range (Tainter 1977:36-38). The composite of these estimates was a density of 6 persons per square mile [9.75 persons per km.^{2}]. Tainter specified a rate of 18.35 persons per square mile for the Santa Barbara Channel coast, cited as the highest density anywhere in pre-contact California. While this latter estimate is partly the product of his restriction of the catchment areas or territories of his coastal sites, the region clearly had a population density well above the 10 persons per square mile [16.25 persons per km.^{2}] threshhold found in the riparian environments of the San Joaquín Valley.

The population densities found in the littoral areas of Los Angeles and Orange Counties appear to have averaged in the 3-5 persons per square mile range. This would place the population density in line with values from south central coastal California. Our values for the San Juan region fit within this range, and suggest a lower population density than found among the coastal Chumash. The values we have generated for the lower Santa Ana River drainage would fall at the lower end of this range.

In discussing population magnitudes in pre-colonial California, it is often mentioned that communities in Chumash territory represented rather dense hunter-gatherer populations. One community in the Goleta area west of Santa Barbara, for instance, was described as having populations of between 1,000 and 2,000 people by members of the Portolá expedition of 1769. Another six communities along the Santa Barbara coast were placed in the 200-600 resident range by Portolá's population estimates. These kinds of community population totals have been compared with data from Franciscan mission baptismal registers indicating converts from specific coastal villages. The latter community population totals have appeared to be rather smaller than the expedition counts would indicate. This discrepancy leads us to consider the various approaches to population reconstruction that have been proposed for contact-era native Californian data.

3.2 Population Estimates Based on Explorer's Accounts: Two Approaches.

Several alternative approaches have been applied to the problem of developing region-wide estimates of aggregate community populations. The first is reflected in the work of Cook and Heizer (1965). It relies on identifying total numbers of contact-era native rancherías within a region and then applying to them estimates of village population size based on European eyewitness accounts pertaining to particular communities. These accounts, describing a restricted number of communities, are used as a basis for estimating "typical" community sizes on a broader scale. Such estiamtes are then multiplied by numbers of identified communities to develop regional population estimates. The sources for identification of numbers of contact-era sites include explorers accounts, ethnographic interviews, and archaeological research used in conjunction. Mission sacramental records are not employed to derive community population numbers, although they may be used to identify named villages.

3.2.1 Comparison of Explorer's Estimates and Mission Register Data.

A second approach attempts to extrapolate to pre-conquest population levels on the basis of a comparison of community population size as reported by explorers with baptismal totals found in mission registers. Here again the use of explorer's accounts is critical. Since not all communities were visited by such exploration parties, those that were visited are made to constitute a sample. The village sizes reported for this sample by explorers are compared to the later mission baptismal totals for each community in the sample in order to develop an average ratio between reported village size at contact and reported baptisms in mission times. This ratio is then extended to communities which were not visited by explorers but did appear in the sacramental records. This method provides an opportunity to cross-check between relative size rankings of villages at contact and relative size rankings as reported in mission data, as a check on consistency.

We have already discussed Alan Brown's use of the second method to develop a ratio of baptisms to pre-contact native population for the Chumash, using explorer's accounts describing the coastal communities mentioned above. His comparison of population sizes would yield a ratio of 1.96:1, as calculated by Johnson (1988:112). Johnson then carried out a reestimation of the type worked out by Brown, this time based on lower estimates of pre-colonial village populations. He corrected certain community estimates from the Portolá Expedition which he felt were too high. On this basis, Johnson calculated a more conservative ratio of 1.65:1. Johnson then cautioned that both ratios still appeared to him to be too high as representative of rates of population decline during the period under consideration. Johnson's concern here has partly been over the fact that the well-known epidemic diseasses such as measles and smallpox which wreaked such havoc at contact in other native frontier areas in Latin America did not similarly devastate the Chumash.

As we shall have the opportunity to discuss in subsequent sections of this report, important work on pre-conquest native population reconstruction has also been done for the missions of Baja California (Aschmann 1959). There a ratio of pre-contact population to baptisms of 2:1 has been derived. In the Baja California case, unlike that of southern California, obvious early epidemic mortality often appears to bolster the case of use of a ratio of this magnitude. Clearly, in the

southern California case, where such epidemic disease loss during the first years of contact is not easy to demonstrate, the use of a nearly 2:1 ratio raises questions. We are faced with interpreting perhaps subtler indications of population loss or non-participation between contact and missionization.

3.2.2 Population Estimates Using Numbers of Baptisms as Indicators of Population Magnitude

Johnson (1988a), having critiqued Brown's use of the ratio method in estimating pre-contact population among the Chumash, followed a different strategy. He held that for his purposes numbers of baptisms as indicators of original community populations were more valid than Brown had assumed, and that the decline in population between Spanish contact and missionization was considerably less than either Brown's original estimate or his own revised calculation of 1.65:1. Since the amount of decline could not be determined, he preferred to use numbers of community baptisms as the most reliable available indicator of the relative size ranking of Chumash communities.

Johnson (1988a: 108-116) discussed in some detail the difficulties inherent in using mission baptismal data to determine contact era population magnitudes. He noted that to some extent disease mortality and flight may have been complicating factors, although not neccessarily preponderant ones. He also noted the considerable time span covered in some cases by the period during which converts born at a given community were being gathered into a given mission. Nevertheless, he felt that for his research purposes baptismal totals could be useful as indicators of relative community size. This assessment was based in part on his comparison of post- 1769 counts of population of some interior Chumash villages with baptismal totals for the same communities. His approach was particularly oriented towards working out relative size rankings of communities, given his interest in regional settlement and political organization issues. His findings concerning the relative completeness of his baptismal data also helped to made this approach plausible.

On the basis of recorded baptisms, Johnson estimated Santa Barbara coastal village sizes as ranging up to a maximum of 340 persons. Community size rankings were determined on the basis of baptisms of persons born at a given community. Thus for the area encompasssed by the ocean to the south and west, the Santa Maria and Cuyama River to the north, and the Santa Clara River to the east, he developed the following rankings of settlement size (Johnson 1988:89):

Very Large Mainland Towns	(290-340 baptisms) = 3
Very Large Villages	(180-210 baptisms) = 9
Large Villages	(95-160 baptisms) = 17
Medium Villages	(40- 90 baptisms) = 14
Small Villages	(15- 39 baptisms) = 15
Hamlets	(-15 baptisms) = 10

These rankings are useful because they do give us minimum numbers based on the baptismal data. They are also comparatively useful in contrasting data from elsewhere in southern California with that dealing with the Chumash.

3.3 Internal Analysis of Baptismal Data and the Development of Population Estimates

Johnson's work has demonstrated the great potential for population reconstruction made possible by a careful analysis of mission sacramental register data. Several approaches can be utilized in undertaking such data analysis. The first is family reconstitution. It has been developed by historical demographers working with parish and other church records, mainly in Europe, which permit reconstruction of family genealogies within a given community over long spans of time. This reconstruction is based on baptismal, marriage, and burial information contained in parish records. This technique is useful in comparing standard distributions of family composition for a given population with possibly incomplete sacramental register data reflecting family composition. This approach allows the identification of fragmentary data on families and permits the drawing of inferences about the size and other characteristics of intact family structures that such fragmentary data may be derived from. The technique also permits the use of anthropological genealogical analysis of kinship structures and marriage patterns over time. This approach formed a major element in Johnson's work with Chumash sacramental register data, allowing him to cross-check the degree of completeness of this data.

An additional method which can be employed to calculate community populations at contact is called Age-Sex Structure Analysis. As applied to our southern California data, it also relies on information on native community population characteristics contained in Franciscan mission baptismal and other sacramental records. However, rather than simply considering gross numbers of native people reported baptized from a given native community, it examines the age and sex distribution of the population at a fixed point in time. Data required to do this is obtained from baptismal, marriage, and burial records. By doing this, it can compare the percentages of persons in the various age groups in the population, and the percentages of reported males and females. This is done to compare these percentages with those from what are defined as a range of normal pre-industrial non-urban "anthropological" populations, in order to identify what elements of the native population may have been either missed by the recruiting missionaries or may have died before baptism into the missions. The idea is that if the native community populations as recorded through baptism are missing large percentages of certain age groups, or have large imbalances between baptized men and women, these factors represent a skewed picture of what the population's true size and characteristics would have been at the moment the Spanish arrived. This approach is based on the fact that the demographic characteristics of pre-industrial populations exhibit certain regularities which allow for the identification of missing data. It also is based on the notion that there are ranges of variation in these characteristics outside of which it is statistically unlikely to find values. The method permits adjustments to community sacramental register information so as to allow more accurate contact-period population estimates.

Each of the methods listed above provides one approach to the problem of reconstructing community population magnitudes at Spanish contact. We will rely heavily on the analysis of Franciscan mission sacramental register information in carrying out reconstruction of contact-era population for Puvuŋa. Thus the methods which rely on analysis of age and sex and family structure characteristics of these sacramental register data will be especially important. Given the fact that the incompleteness of these data constitutes our principal difficulty, it will often be neccessary to use several of these techniques at the same time to cross-check results.

4. Sources of Information on Contact-Era Native Settlement Demography In Southern California

We have mentioned the importance of explorer's accounts as sources of information on native populations at contact. These accounts can be placed in three general categories. The first is that of expeditions of exploration, either prior to 1769 or during the first several years of Spanish occupation. These expeditions visited communities which had not yet been affected directly or indirectly by the European presence, as far as we know. Additionally we have later accounts of "expedition" visits to native communities which were either beyond the frontiers of Spanish control or otherwise not yet missionized. A third type of more routine report was sometimes produced by missionaries or other officials who had visited or had knowledge of colonial native communities not yet reduced to the missions.

4.1. The Portola Expedition: Village Counts and Estimates of Village Size in Southern California

The first expedition of Spanish colonization of California in the late 1700s was described in diaries left by Ensign Miguel Constansó, Fray Juan Crespí, and Don Gaspar de Portolá, all members of the expedition (Bolton 1927; Constansó 1992). This expedition did not provide, for the native rancherías we have analyzed, the same coverage of population estimates that they did for coastal Chumash communities. Unfortunately, many of the rancherias we will discuss were not visited by the Portolá expedition in 1769. Nevertheless, the community population estimates recorded by expedition members do provide a type of data fundamental to our first-mentioned population reconstruction technique.

We will briefly summarize the information provided by these accounts as they bear on Luiseño, Juaneño, and Gabrielino communities. Koerper (1991:14-16) has also summarized some of this information.

The Portolá expedition departed San Diego on its journey of exploration on July 14th, 1769. South of San Luis Rey it passed into Luiseño territory. On July 17th, 1769, Crespí mentioned that over 40 persons visited a Spanish camp near Buena Vista Lagoon. On July 18th, near where the Mission of San Luis Rey would later be built, over 90 native people visited the camp, while during the following layover day at the same camp over 200 were said to have made their appearance. At the camp of July 20th at Santa Margarita some 60-70 natives, both men and women, visited from nearby settlements. At Las Pulgas Canyon (inland from Las Flores [Uxme]) on July 21st, perhaps about 20 native people visited the Spanish camp. At Cristianitos Canyon on July 22nd, some 20-30 people, men, women, and children, visited the Spanish. On July 23rd, the expedition passed one village southeast of San Juan Canyon, without mentioning numbers of inhabitants. The following day, passing up San Juan Canyon, two villages were passed and a number of inhabitants seen. The camp of that evening, July 24th, was established near a village which has been placed variously on Trabuco Creek or Aliso Creek (Bolton 1927:138; O'Neil 1989:113). The former location appears to be the correct one, meaning that the expedition would have visited Alauna ['Alóna, Aliŋa] (Harrington 1986: Reel 103: Fr.037; Reel 104: Fr.030) For this village some 50 inhabitants were mentioned. After a day's layover, the expedition traveled to a spring site, probably Tomato Springs, which was not inhabited. The next day, July 27, the Tustin Plain was reached, and camp was made near Santiago Creek. Only two native people were seen that day. On July 28th the expedition camped near a large Gabrielino ranchería, perhaps Totpabit , from which that afternoon some 52 natives came to visit the camp. The following evening the expedition stopped near a village believed to be Pomoquin, in the Brea canyon area. That village was said to have numbered either 50 or more than 70 people, depending on the account.

No further information on encountering natives or their villages appears until August 2, when nine people from a village in the vicinity of modern Los Angeles visited the Spanish in camp. Another ranchería was encountered on August 3 west of modern downtown Los Angeles, for which Portolá gave an estimate of 30 native people. On the evening of August 4th, west of modern Westwood, the Spanish camped near a village which had at least 30 inhabitants, according to Portolá. After climbing north through Sepulveda Pass and into the San Fernando Valley, they camped near a large village in the Encino area, where Portolá mentioned 60 inhabitants. That day some 205 native men, women, and children were counted while visiting the Spanish camp, according to Constansó. This was the last community mentioned in Gabrielino territiory.

In interpreting this information, several points need to be considered. Koerper (1991: 14-15) raises the question of whether the numbers of "gentiles" mentioned in the Spanish diaries represented counts of adult men only or of men, women, and children. In general, the common Spanish practice was to count total numbers of natives that they encountered, rather than just adult males. In the diaries in question, the native people are referred to with a variety of terms, making it clear that not just adult men were being counted.

In the second place, several different kinds of descriptions of population appear in the diary accounts. Parties of individuals and native communities passed while on the march are referred to, as well as communities situated near overnight camping places. In addition, estimates of

crowds of native people visiting such campsites are also given, these visitors possibly hailing from more than one ranchería.

The numbers given for communities passed *en march* were probably less reliable than those for villages located near overnight campsites. We do know that in at least a few instances the numbers of natives visiting the Spanish camps were the product of actual head counts, as happened at the Encino area camp on August 5, 1769. The village population estimates also appear to have been the product of counting people rather than tallying dwellings, since elsewhere in the expedition diaries the counting of houses is mentioned without the employment of any formula for converting numbers of houses into numbers of inhabitants (Browning 1992:32).

The magnitude of population reported by the expedition in Luiseño/ Juaneño and Gabrielino territory was affected by several additional factors. First, the expedition followed an interior rather than seashore route. This meant that a number of large rancherías located in seashore or estuary settings were not visited. Secondly, it appears that when native delegations visited Spanish camps or the Spanish passed by native villages, some residents, particularly young women and children, tended to stay out of sight until the visitor's intentions were clarified. Younger people were seen as both more vulnerable to capture as spoils of war, and more susceptible to witchcraft. O'Neil notes that the number of Gabrielino-speaking people encountered by the expedition in the San Gabriel River region in 1769 could not compare with the number of people found in the area by Father Pedro Benito Cambon when Mission San Gabriel was founded in 1771 (O'Neil 1987). Some members of the mission guard had participated in the Portolá Expedition two years earlier. Cambon reported:

> The number of those [Gabrielino] who came was so large that the soldiers of the guard insisted that they had not seen a tenth so many on their first "entrada" or entry into the valley in July of 1769 nor when they traversed it twice more in January and April of 1770... [Temple 1971:20].

A similarly low number of people were noted during the expedition's passage through the densely settled San Juan Canyon near the later site of the San Juan Capistrano mission. Two villages were mentioned, but otherwise there was little information forthcoming on the demography of the area.

In addition to a probable wariness about contact with the Spanish invaders, the population information provided by expedition sources also reflects the dispersal of some ranchería residents to gathering sites and possibly satellite camps at some distance from the main village. The time of year in which the expedition passed through Orange County was one marked by the gathering of sage and grass seeds.

It is important to note here that we do not find for the Takic-speaking groups visited by the expedition in 1769 any compelling evidence for exaggeration of the magnitude of populations encountered, but rather the almost certain undercounting of village inhabitants, as we have suggested. The one area of difficulty here is the possible confusion of either expedition diarists or

of modern scholars over populations of individual villages as opposed to congregated populations from several communities gathered at fiestas or attracted by the presence of the Spanish. The latter occurs during the expedition among the Gabrielino, Tataviam, and Chumash, for example. We have previously noted concern by scholars over possible exaggeration by expedition members of the population in coastal Chumash areas. While these large populations may be aggregations of individuals from several communities, we would not neccessarily surmise from the expedition's reporting of Takic-speaking populations that total numbers in the Chumash area were simply wildly exaggerated.

The Portolá expedition did not visit the site of Puvuŋa during its travels up and down the California coast, and neither did the previous expeditions of Vizcaíno and Cabrillo. The data from the Portolá expedition has, however, been useful in providing a range of reported population values for various native territories in southern California.

In addition, later documents reported on further visits to Takic-speaking communities. These included the accounts of Garces [1776] **(Coues 1900)**, Grijalva [1795] (**Oxendine** 1983: 83,90), Zalvidea [1806] (Cook 1960), and Palomares [1808](Cook 1930)(Earle 1992a). All of these descriptions provided estimates of native population for either coastal littoral or inland communities. These accounts are especially valuable in the way that they help us identify plausible minimum population estimates for permanent settlements in different environmental settings.

4.2 The Native Population and Missions San Juan Capistrano and San Gabriel

We have discussed the importance of Franciscan missionary sacramental registers, containing records of native baptisms, marriages, and burials, as sources of information for population reconstruction. These data also permit the analysis of social organization and marriage ties, and also help us to locate native settlements. In the following section we describe the impact of the mission system and the demographic data collection which the missionaries carried out.

Missions San Gabriel Arcángel and San Juan Capistrano were founded in 1771 and 1775 respectively. The San Gabriel establishment was the second to be created in southern California after San Diego. In the 1770s this mission aggregated converts from among the Gabrielino and Serrano language groups. The former included so-called Fernandeños, inhabitants of the northwestern Los Angeles basin who spoke the Fernandeño dialect of the Gabrielino language. Mission San Fernando Rey de España was founded in the western reaches of Gabrielino native territory in 1797, absorbing Fernandeños and neighboring Chumash and Serrano peoples. In 1798 the mission of San Luis Rey de Francia was established on the San Luís Rey River to the south of San Juan Capistrano. This establishment also absorbed missionary terrain formerly the responsibility of an older mission, San Juan Capistrano. During the first twenty years of its existence, Mission San Juan Capistrano had recruited native converts or neophytes from communities speaking either the Juaneño dialect of the Juaneño/Luiseño language (southeast of the Tustin Plain) or Gabrielino, in the case of Santa Ana River region communities. A smaller

number of converts also originated in Luiseño-dialect villages which would later become the responsibility of the missionaries at San Luís Rey.

In analyses of the process of native missionization in California, it has been noted that a general relationship usually exists between the relative distance of a native community from a mission site and the dates at which recruitment of substantial numbers of commmunity members to the mission took place (Johnson 1988a:109-110; Milliken 1987:16-33). The more distant the community was located from the mission, the later in time were the dates of its "reduction" to the mission.

At Mission San Juan Capistrano this relationship of distance to dates of recruitment seems to hold up quite well. It is readily apparent, for instance, that the more distant Santa Ana River drainage was affected by missionization at a later date than the San Juan Canyon area adjacent to the mission. At San Gabriel this same pattern generally holds true, although the early recruitment of rancherías during the years 1772-1775 seems anomalous in this respect. The villages of Hutukŋa (Jutucubit) and Pomoquin were recruited into the San Gabriel Mission very early. These communities do not appear to have been located very close to the mission at all, as one might expect given the dates of their recruitment. It appears that a possible political network of exchange-linked villages stretching from Whittier Narrows to the mouth of Santa Ana Canyon were the first to be recruited to San Gabriel mission. In considering this issue, we must keep in mind that the San Gabriel mission was first established in the Whittier Narrows area, some 5 miles [8.1 km.] to the southeast of its later site, whence it was relocated in 1775 on account of flooding problems at the Narrows.

We know that two rancherías referred to in the Portolá Expedition account- perhaps identifiable as Totpabit and Pomoquin- were linked by fiesta invitations in 1769, and we also have evidence of marriage ties between various of these rancherías, as we shall later see. We thus seem in this case to be dealing with some sort of sociopolitical linkage between communities which affected the process of their being incorporated into the mission system. Suffice it to say that various other communities at the same distance from the old and new sites of the San Gabriel Mission did not yield significant numbers of converts until many years after Hutukŋa did, for instance. This can be seen in Table 1, which lists the approximate time span during which the first ten converts from various rancherías in the Los Angeles Basin region were baptized.

The process of mission recruitment of individual communities was often not an organized movement of population to the mission at a single point in time. At Missions San Gabriel and San Juan Capistrano the recruitment of community populations usually occurred over a number of years, rather than being the result of one or several "round up" episodes bringing the majority of a population in at once. This "trickle" migration to the baptismal font seems consonant with what we know about alternatives to mission life, that is, labor on the ranchos. In addition to those who passed up the missions for estate labor, there were those who may have traveled back and forth to the missions but were never baptized. We also have unknown percentages of the unbaptized who actually lived at the mission but were not baptized. This latter segment of the population deserves greater research attention. In the case of Mission San Juan Capistrano, it has

been possible to identify numbers of individuals who were never baptized at the mission. These circumstances present various difficulties to the reconstruction of pre-Spanish native population estimates.

Figure 2 shows annual baptisms for Mission San Juan Capistrano and Mission San Gabriel. This graph indicates that for both missions upper limits existed on the rate of absorbtion of neophytes into the mission system. The neccessity of expansion of food supply to accomodate the increases in mission population meant that particular years of heavy recruitment to the missions were often followed by periods of consolidation and lower annual baptismal totals, as the food supply was stretched to keep up with population. The early 1790s, the 1805-6 period, and 1811 saw particularly active recruiting of neophytes at both missions. Both the 1806 and 1811 episodes appear to have been related to the concerted push after the turn of the 19th century to round up remaining non-mission natives (Johnson 1988a:135-137). This effort appears to have been accompanied in both 1806 and 1811 by higher mortality rates.

Both at Mission San Juan Capistrano and Mission San Gabriel the process of baptism of native people was not so organized as to bring in whole villages at once until after 1800. The indication in Table 1 of the approximate time span during which the first ten neophyte members of each recruited ranchería were actually recruited makes this clear. In the cases of many native communities, particularly at Mission San Juan Capistrano, residents straggled up to the baptismal font in small numbers over an extended period of time. It was principally after 1805 that more comprehensive attempts were made to get large percentages of community populations baptized at one time. The somewhat casual attitude towards recruitment seems to have been most pronounced at Mission San Juan Capistrano, where the handling of native place names also seems to have been very unsystematic.

While baptism of neophytes and births of their offspring at the missions enlarged the mission populations, other demographic phenomena tended to negatively affect the long-term viability of the mission population. In addition to the infrequent impact of major epidemics, other more endemic diseases affected rates of mortality and reproduction so as to shrink the mission native populations. Figures 8 and 11 show mortality rates at Mission San Gabriel and Mission San Juan Capistrano during the 1776-1815 period. A rate of around 50 deaths per thousand has been cited by Wrigley (1969: 62) as a mortality level above which pre-industrial populations have difficulty maintaining a stable level of population. This level is approximately reflected in Weiss' (1973:145) Model Life Table MT: 25.0--45.0. Mission San Juan Capistrano exceeded this limit during most years, averaging a Crude Death Rate of 66.3 per thousand. Mission San Gabriel for its part showed a very similar rate of mortality of 66.4 per thousand. The average mortality figure for Mission San Juan Capistrano includes the mortality associated with the earthquake of 1812, during which 40 neophytes were killed at the mission (Engelhardt 1922: 54-55). In fact, annual mortality rates at Mission San Gabriel were usually higher than at Mission San Juan Capistrano, but higher losses during crisis years at San Juan has tended to even out the two average death rates.

The Crude Death Rates expressed in these graphs were, however, affected by the church doctrine and procedures which linked baptism and burial. Membership in the statistical population universe (the mission neophyte population) from which cases of death were recorded was acheived by baptism. However, baptism was itself sometimes administered to non-Christians because of a perceived imminence of death requiring immediate administration of the baptismal sacrament. Thus there did develop between the mission baptismal and burial data an interdependence of statistical incidence that tended to artificially elevate the death rate to a small extent. In examining the San Juan Capistrano burial register for the period 1777-1789, we note that 218 native people are listed as having died, of a total of 997 baptisms. Some 109 of these deceased who could be classified by age had died during the same calendar year that they were baptized or the following calendar year. Of these, 67 were aged under 1 year at baptism, a further 12 were aged 1 to 5 years, 3 were aged 6-15, and 22 were adults over age 15. Of the 22 adults, 6 had been baptized on account of their being in danger of death. These were the only persons over age one in our sample who had been baptized for this reason. Two infants under age one, out of 67, had also been baptized on account of danger of imminent death. These data give us some idea as to the relative incidence of infant mortality as well as the frequency of precautionary baptisms of those ill enough to be considered in imminent danger of death. These precautionary baptisms constituted some 7.3 per cent of our sample of baptisms and deaths during the 1777-1789 period. As a percentage of all who were baptized and died between 1777 and 1789 the figure would likely have been even lower. We can thus estimate a possible decline in the Crude Death Rate of 3 to 4 per cent if we factor out those who were baptized and added to the mission population because they were thought to be at great risk of dying.

The mission neophyte Crude Death Rates reflected a situation in which native infant mortality appears to have increased above pre-mission levels. We have estimated that pre-contact fertility and mortality rates for Takic-speaking coastal southern California can be placed approximately at levels associated with Weiss' Model Life Table MT: 25.0--45.0 (Weiss 1973). The age specific mortality rates associated with this particular life table, with its Crude Death Rate of 51 per thousand include an infant mortality rate (age 0-1) of circa 300 infants per thousand aged 0-1. Infant mortality rates above this level generally implied serious demographic crisis in non-urban pre-industrial populations.

Our neophyte Crude Death Rates for Missions San Juan and San Gabriel of circa 66.3 per thousand suggest an infant mortality rate for the missions of between 300 and 400 per thousand, taking into consideration Weiss' age-specific population models. These rates would appear to be rather too high to sustain a population in a state of demographic equilibrium. Johnson (1988a:146) has cited infant mortality rates for several Chumash missions which range as high as 516 per thousand for the period 1795-99. Such rates would clearly lead to unsustainable losses, since a correspondingly high compensating birth rate would be very difficult to achieve.

As we consider strategies for the reconstruction of community populations on the basis of baptismal data, we need to keep in mind this high infant mortality after Spanish contact. Our reconstruction strategies will be designed to deal with the underrepresentation of children in the baptized population that these high rates of mortality among the very young brought about.

Fig. _: Mission San Juan Capistrano Native Baptisms 1776-1815

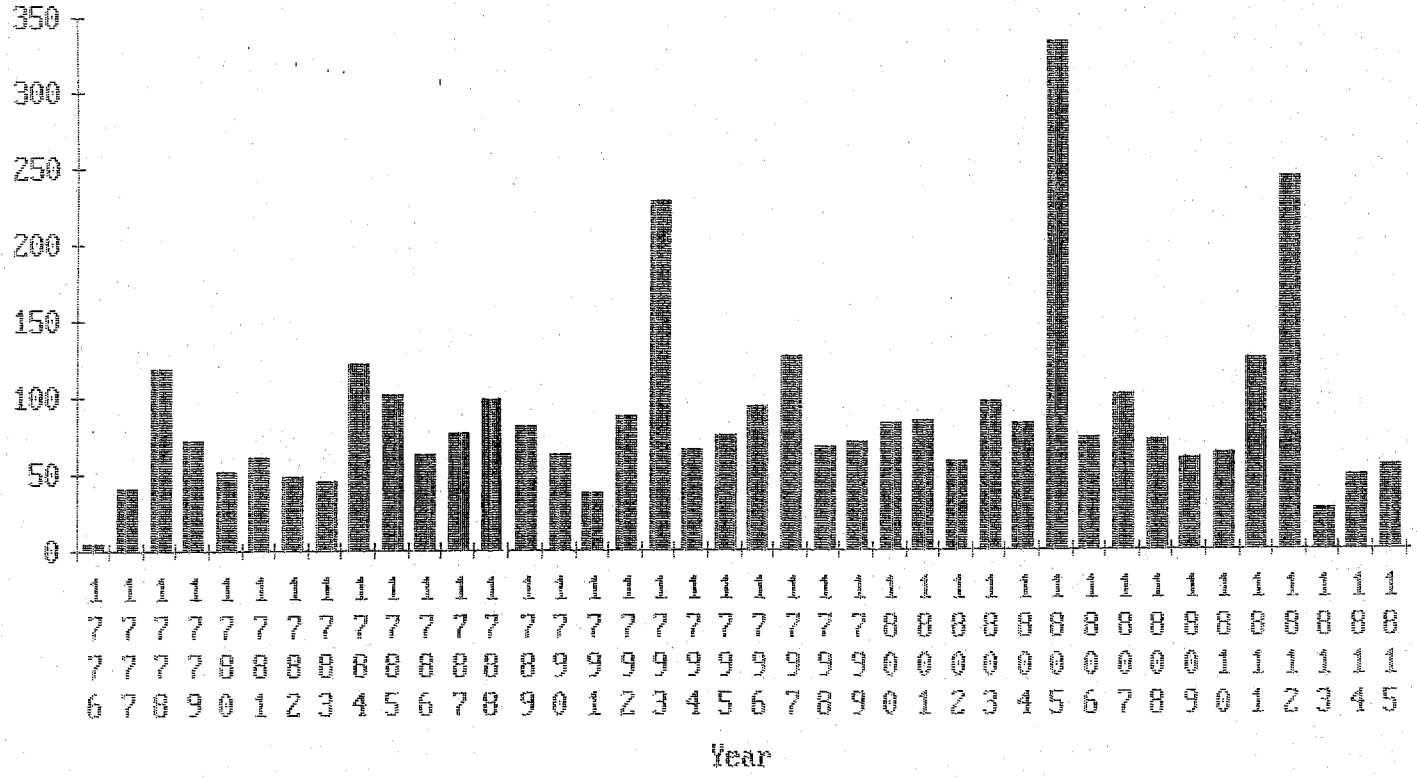


Fig. —: Mission San Juan Capistrano Native Deaths Per 1000, 1778-1815

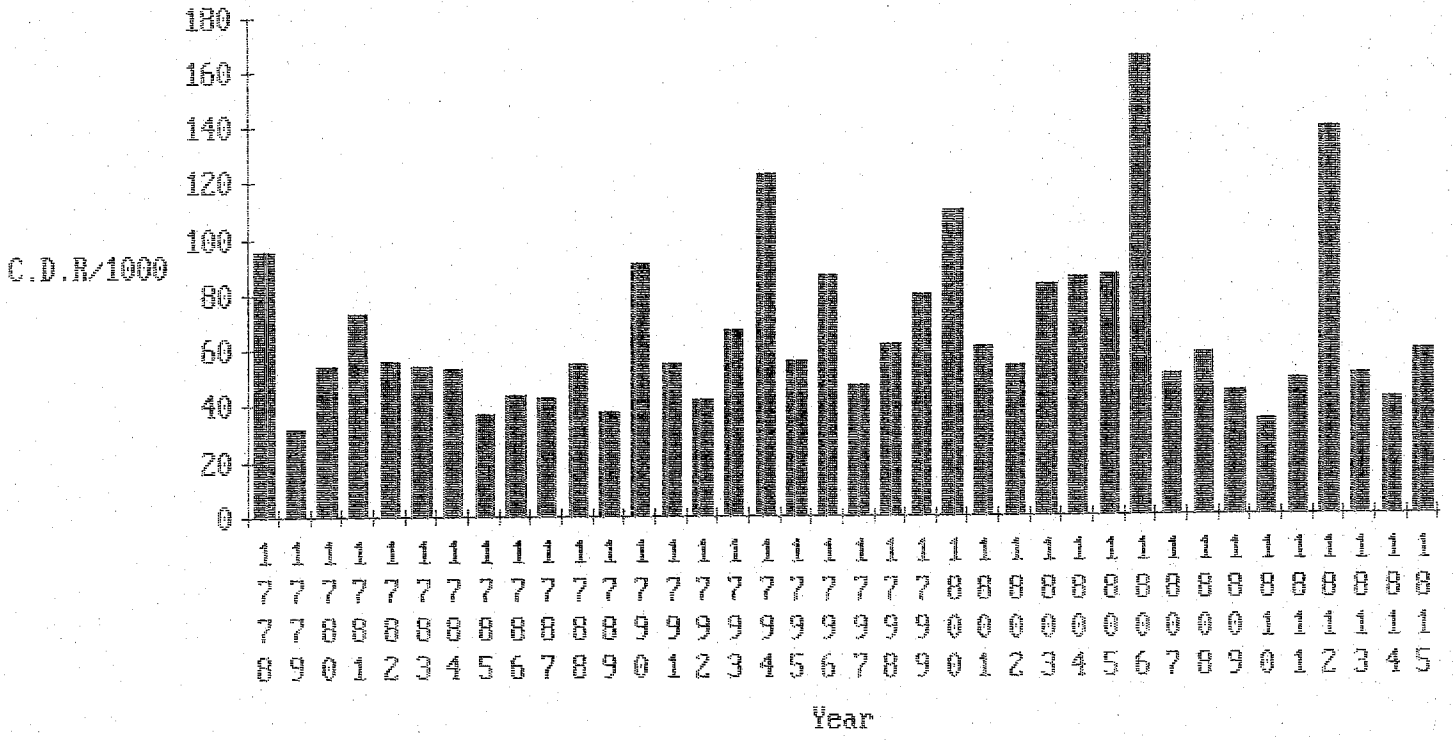


Fig.: Mission San Gabriel Native Baptisms 1776-1815

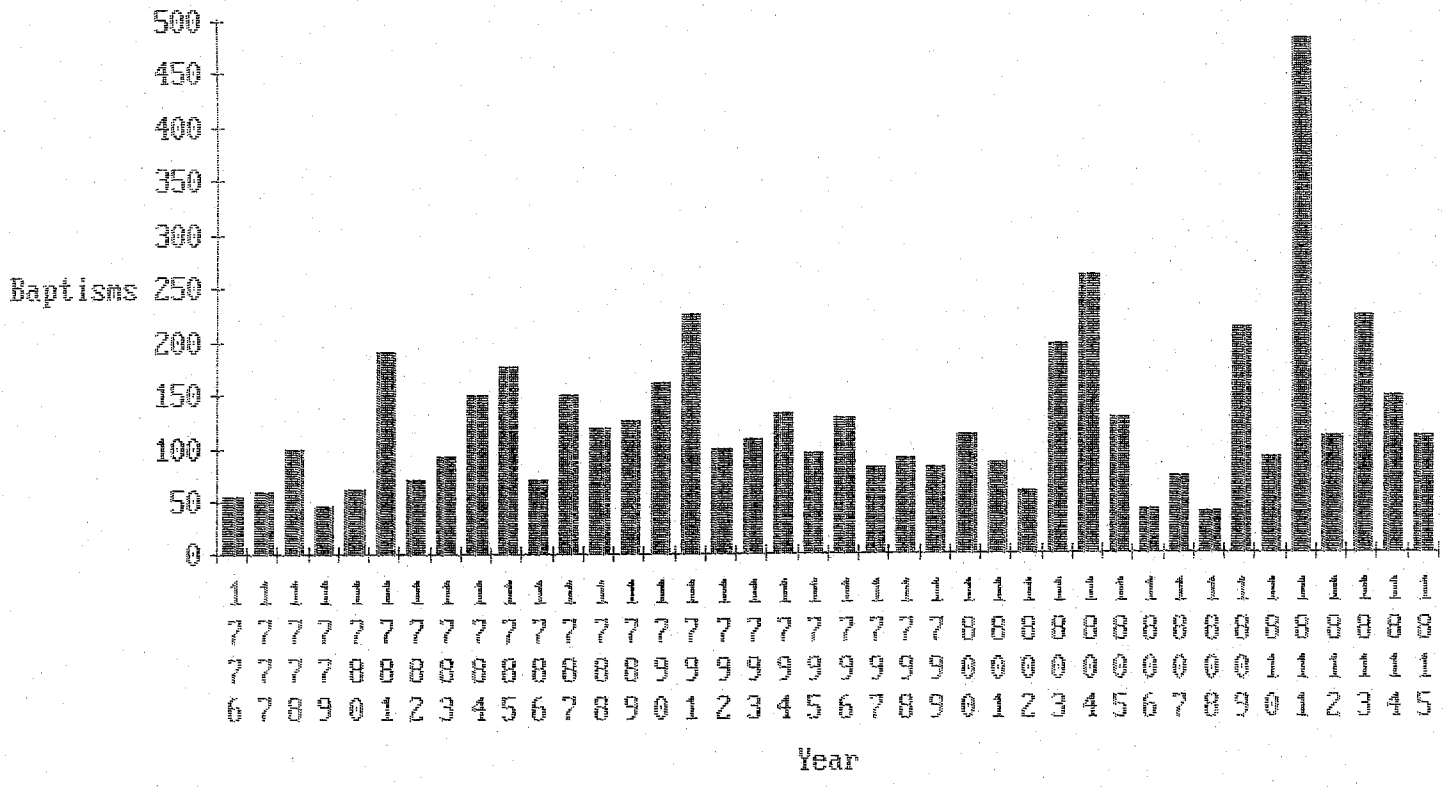
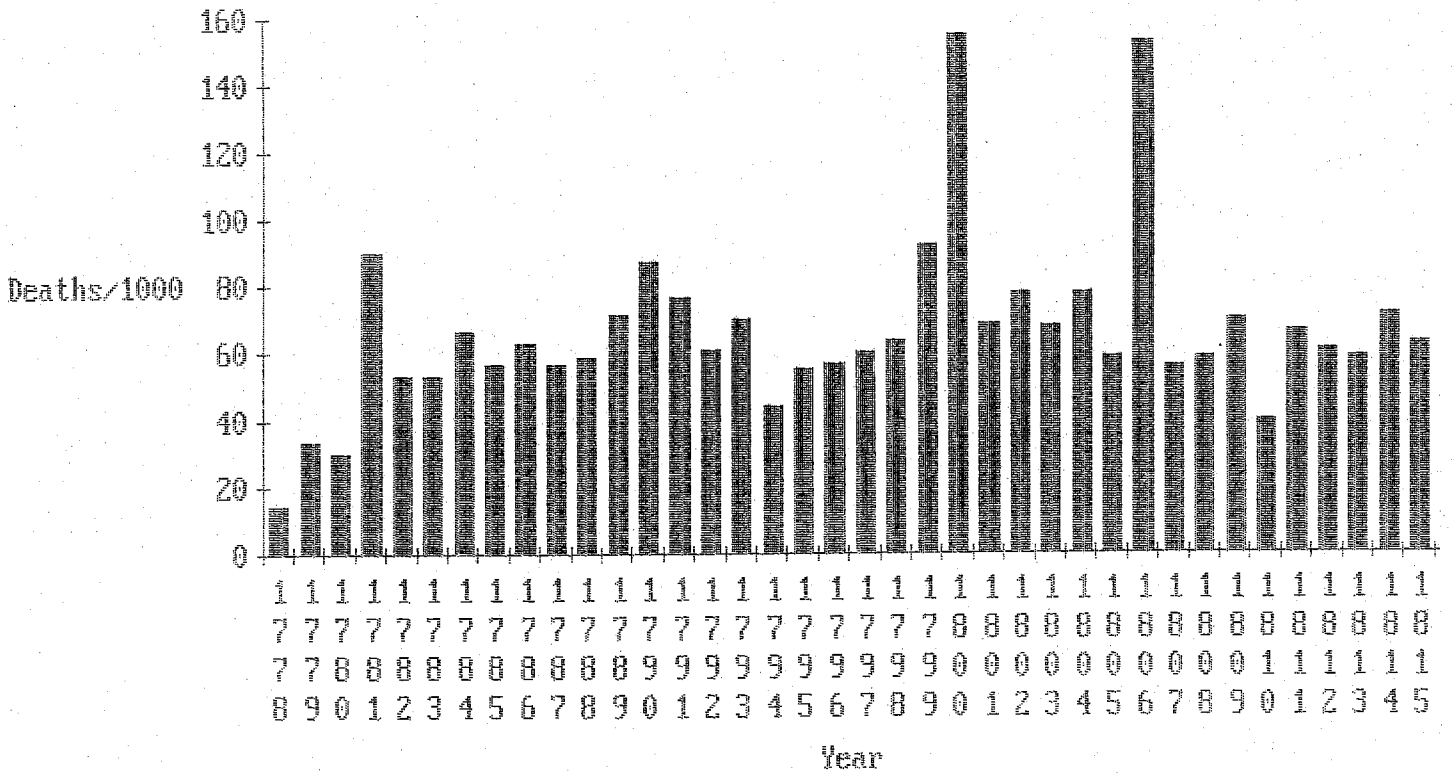


Fig. _: Mission San Gabriel Deaths Per 1000 1778-1815



Infant mortality was only part of the story, however. In addition to the impact of influenza and respiratory diseases, both infant and adult gastro-enteritis and syphilis affected both women of child-bearing age and young infants, increasing mortality and decreasing the rate of reproduction. Elevated mortality among females of reproductive age also served to bring about a long-term decline in the native population. Both Johnson (1989) and Walker, Lambert, and De Niro (1989) discuss these mortality factors. They emphasize that a depression of rates of effective female reproduction was a major factor, along with elevated child mortality, in bringing about demographic crisis.

An official questionnaire sent in 1813 to Franciscan missionaries at each mission in California requested information on native diseases and curing, among other things. The replies indicated that at almost all of the California missions, the priests in charge were aware of severe native population loss at the missions. They noted that the reproduction was lower at the missions than in pagan communities. They mentioned syphilis and dysentery as the most important illnesses, although typhus was also mentioned. Dysentery was said to be most severe in fall and spring. The impact of syphilis was said to have increased with the passage of the years since the founding of the missions. It was also implicated in the weakening of people so that they would be liable to be killed by other diseases. The only epidemic disease mentioned by name was measles, which had appeared in 1806. Smallpox was not mentioned.

During the first 15 years of mission activity the mortality of young children appears very high, although mortality of adults *at the missions* does not appear to have driven the overall mortality rate beyond 80-90 per thousand. In only two of the fifteen years during the 1778-1793 period did the deaths at either mission exceed 80 per thousand. This is because the adults (those aged 15 and older) baptized at the two missions during this period tended to be younger adults. Many older adults were either baptized long after their children were, or were not baptized at all. Thus the adult contribution to the mortality rate at the San Juan Capistrano and San Gabriel Missions during this early period probably *did not* reflect the true levels of adult mortality for the region as a whole.

4.2.1 The Use of Sacramental Register Information: The Identification of Communities and Individuals

The sacramental registers maintained by the Franciscan missionaries are important as sources of information on both native people and native communities. The recording of sacramental events in the life of the individual provide an outline for the development of a demographic and social profile of the person. This would include the place and date of birth, dates of marriage and death, the place of death, and the identities of next-of-kin, marital partner, and so forth.

In addition, the placename information contained in the sacramental register entries allows us to compare such data from mission times with later ethnographic material on native places. In order for us to be able to reconstruct both local and regional native cultural geography, we need to be able to identify native settlements both with people and with places. This is the fundamental first step for any attempt to deal with settlement demography and inter-village marriage patterns. The basic type of mission record information of greatest importance for the study of native

communities is the so-called Partida de Bautismo or "baptismal certification entry". This entry should specify what community the native person being baptized hails from. This connection is usually expressed in terms of the village of origin of the baptized person's father, if the person being baptized is not an adult. Otherwise the village or ranchería of origin of the person being baptized is specified. It is obvious that for baptized children, the issue of post-marital residence pattern is very important in deciphering the relationship of the place of origin of a juvenile's father, and his/her own place of origin or birth.

As we have mentioned, the different missions used somewhat different formats for recording baptismal information, depending on what missionary priest was doing the recording. This variability can be seen in the following examples.

A typical entry from Mission San Juan Capistrano can be translated from Spanish as follows:

200 On the 1st of June of 1779 I Solemnly Baptized, in the Church of this Mission, an adult of 15 years of age previously called Aguigui son of Fernando gentile parents of the ranchería [settlement] of Genga (his father is named Ad[ult] Neri). To whom I gave the name Fernando Joseph. His Godfather was Antonio Aracua Indian of this Mission who was advised of the spiritual kinship [obligations]. And in witness whereof I signed it.
Fr. Pablo de Mugartegui[33]

The format used by different Franciscan missionary priests in the Alta California missions varied somewhat from priest to priest and mission to mission. For persons whose families had not yet settled at the mission, baptismal records usually contained information on the estimated age, gender, baptismal name, village of residence or parental residence, and date of baptism of each person baptized.

The example given above provides the following information on village of origin of the person baptized: "Aguigui son of gentile parents of the ranchería [settlement] of Genga (his father is named Neri)". As Johnson (1988c:22-23) has pointed out in regard to similar entries for the Chumash, it may appear confusing whether the village of origin in question is that of the person baptized or of the parent. Our entries for San Juan Capistrano mission appear to be naming the villages of origin of male parents. Some entries- "Coronni... daughter of Zasainet, gentile of Paucse,...", for instance- make such reference clear. In such cases, the patrilineal biases of the European missionaries appear to have dovetailed with the patrilocal residence preference of local native people.

At Mission San Juan Capistrano, the person's native name was also frequently given in the baptismal record, and often the native name of either the father or the father and mother, living or dead. However, the extent to which these latter native names were recorded had a frustrating tendency to vary from priest to priest, and from mission to mission. Native names were recorded for San Juan Capistrano neophytes born outside the mission system quite consistently, and often for their fathers (and sometimes mothers) as well. Even after 1790, while the quality of record

keeping declines in some respects at San Juan Capistrano, native names of the fathers of young people baptized are still commonly recorded.

At Mission San Gabriel, on the other hand, during the earlier decades of missionary activity before the end of the 1790s, such information on native names is often lacking. A typical entry for this period by Father Miguel Sanchez, who handled many baptismal entries during the late 1780s and the 1790s, indicates the problem. It is interesting to compare it with the San Juan Capistrano entry appearing above.

1216 Francisco Antonio child of Pububit	On the 14th day of July of 1785 in the church of this Mission of San Gabriel Arcangel, I solemnly baptized a child of three years son of gentile parents of the Ranchería Pububit and I gave him the name Francisco Antonio. His Godmother was Salome María , wife of Antonio California.
	Fr. Miguel Sanchez

Often it turns out to be difficult to identify the original native family unit to which the baptized individual belonged, because native names of parents of those baptized were not recorded. This created considerable difficulties for the analysis of materials concerning Puvunga, for instance. Material from the early decades at San Gabriel was also difficult to use in identifying high status or chiefly individuals and families, again because native names were not recorded.

A second problem was confronted in the tracing of lines of descent from individuals and families of Puvunga origin. Such tracing depends in part upon the identification of children born to Puvunga individuals once the latter have been baptized. The recording of sacramental register information on offspring of native families already incorporated into the missions through parental baptism was different than for those families not yet incorporated into them. Children born to established neophyte parents were not listed with native names, although we believe that these were still bestowed on such children by their kin groups.

Neophyte parents were now identified by either Christian personal baptismal names put before their former native names ("Jacinta Japelcom", for example) or by Christian baptismal names alone. This handling of given names and surnames is another area where the practices of individual priests varied. At San Juan Capistrano it was more common for Christian given names and native surnames to be used in register entries for baptized persons. Unfortunately, for many years at Mission San Gabriel (during the period from the early 1770s through the late 1790s) it was not possible to use native names as surnames, given the fact that native names were never recorded in the baptismal entries in the first place. This would have been a very desirable practice, to avoid the confusing of different native neophytes with identical Christian given

names. At San Gabriel, in cases where only Christian given names were recorded in the baptismal register entries, the priests making these entries nevertheless could not manage to avoid using the same Christian names over and over-- José María, María Josefa, and so on.

Now this problem of duplicate Christian names for baptized neophytes was given an even greater significance by the failure of various of the missionary fathers at San Gabriel to consistently cross-reference individuals mentioned in the sacramental registers to their baptismal entry numbers. It was not until around 1813 that this was finally being done with consistency. Again the problem was one of poor record-keeping at the outset making it difficult for susbsequent missionaries to keep track of individuals with identical Christian names.

This situation poses a challenge for researchers interested in identifying the village of parental origin of neophyte infants born to neophyte parents at Mission San Gabriel. In the absence of baptismal cross-reference numbers for the parents appearing in the neophyte child's baptismal entry, it becomes neccessary to try to match the parent's Christian given name against identical given names in the baptismal register to identify the neophyte parent's village of origin. Because some Christian given names were duplicated, this matching procedure cannot always be one hundred percent certain. This has led to a situation where some of our references to missionized neophyte native people do not indicate the baptismal entries corresponding to these individuals.

In addition, the inferences that can be made from baptismal information are sometimes affected by the extent to which native people were either baptized en masse as family or community groups or individually. Where families were baptized as a group and the relations between the constituent members were noted, it becomes possible to reconstruct family structures much more easily than would otherwise be the case.

4.2.2 Native Named Places, Communities, and Population Reconstruction

Analysis of mission sacramental registers has provided important new insights on native political geography. In addition, we have found out much about the naming of places other than those that show up in the mission records. As we have indicated, a principal objective of our study of native cultural geography and named places has been to identify that set of rancherías in coastal Orange County which were occupied at the time of the Spanish conquest. If this can be done, it allows population estimates to be calculated using our first reconstruction method, as described above. This relies on assignment of average estimated community population counts, based on explorer's reports, to each identified village. While we have not used this technique in our population reconstructions for our sample communities, the approach is useful as a very approximate cross-check on regional population levels and densities.

The availability in recent years of Harrington's field notes has expanded our awareness of how thoroughly features on the landscape (springs, pools, hills, rock outcrops, rivers, mountain peaks, and so on) were named by southern California native groups. To these were often applied one of several types of word endings used among the Gabrielino, Juaneño, and Luiseño. These included the -vit/bit and -nga suffixes referred to above. Understandably enough, consultants of

Harrington's were able to name areas they had been born in and grown up at in very great detail, while more distant areas were treated in much more summary terms.

The significance of named places as possible campsites, permanent villages, or clan territories has been subjected to a double scrutiny. First of all, we have identified named locations in the mission sacramental records which appear to be places of residence of those baptized. We have also derived from the field notes of Harrington names referring to village sites and clan territories among various Takic-speaking groups. An essential question which arises from this is the following- are the named places of origin or recent residence which appear in the sacramental registers always permanent rancherías?

Reid (1926:3) mentioned in his nineteenth century memoirs of Gabrielino native life that the ranchería chiefs took on the names of their villages followed by a suffix which he gave as *ie* or *vie*, which suffix he said might vary slightly from case to case. He gave the examples of Asucsagnie as the name for the chief of Asucsagna, and Sibavie as that for the chief of Sibagna. Of the 28 rancherías that he listed as Gabrielino settlements, 26 were given with the -nga or -na locative form.

As we have indicated above, the use of the -nga suffix (Harrington's ŋa) as both generally a locative suffix and specifically a placename suffix in Gabrielino, Juaneño, and Luiseño is well attested to by twentieth century linguistic research (Boscana 1933:148; Hyde 1970:25-2). However, the use of a different class of locative ending is also referred to by Harrington (Boscana 1933:148, 217), one which he identifies as referring to *individual persons* associated locatively with a particular place, rather than to placenames per se. The distinction might be as, for example, between Morristown as a place name, and Morristowner as a designation for a person hailing from there. Harrington distinguishes the -nga word ending from what he calls singular and plural gentilicious suffixes (-vit or –χwitc, and -yam) meaning "person of..." and "people of..." respectively. In the case of the ranchería of Putiidum near the San Juan Capistrano Mission, the locative suffix form is given as Putiidumŋa [Putiidumnga] while the singular gentilicious form is Putiidumŋaχwitc [Putiidumngahwich], person of Putiidumnga, and the plural is Putiidumyam, people of Putiidum. The latter plural form was often used to identify people associated with a given ranchería who constituted a localized clan group.

This singular form indicating "person of..." is identified by Harrington as having the suffix form "-vet" or "-vit" among the Gabrielino and the form "-χwitc" among Juaneño speakers (Boscana 1933:148). Thus we can think of both of these forms as also having a locational sense, but in this case associating *people* with places rather than associating *place attributes* with places.

Our analysis of native names in the Mission San Juan Capistrano and Mission San Gabriel sacramental registers does not completely bear out Reid's claims about the construction of chiefly names. It seems likely that his mention of the suffixes *ie* or *vie* refers to Harrington's -vit word ending. It is also apparent that this suffix was not an insignium of chiefly rank. Many individuals baptized at the San Juan Capistrano mission were listed in the baptismal register with names containing both -vit and -χwitc [hwich] suffixes. There was a tendency for the -vit suffix to appear more frequently for residents of villages traditionally classified as of Gabrielino

affiliation, and the -χwitc for residents of Juaneño affiliated places, but this was only a tendency rather than an absolute rule. At the Juaneño ranchería of Putiidum, for example, four individuals can be identified in the baptismal register with -vit type suffixes in their names, while only one appears to use the other suffix form. At Pange, among identified baptized and unbaptized people, 6 names of baptized people contained the -bit form, while 12 others were marked by the -χwitc form.

Our documentary information from mission times indicates that the village or ranchería designations which appear in mission sacramental registers were not usually, as Reid suggested, the personal names of the chiefs of these communities. Only in very scattered instances do we find mention of a member of a chiefly family who bore the name of his family's rancheria. In addition, we have Boscana's account of the founding of some 15 Juaneño towns in "olden times", and in each of these cases the purported founding chief and the village founded had different names (Harrington, 1934:60-62).[37] We do find more commonly, however, various cases in the San Juan Capistrano sacramental registers where residents of certain communities appear to have borne names identical to those of these founding chiefs mentioned by Boscana. In most cases, however, these residents and the founding chiefs in question were associated with *different* rancherías. We even can identify one case where both father and son in a chiefly family bore the names of chiefs listed as founders of several of the 15 original Juaneño villages.[38] As indicated in note 36, the names of the chiefs in question seem idiosyncratic enough to suggest that their later use was a reflection of their historico-mythic importance rather than simply representing the use of a common personal name.

Village names listed in the sacramental registers appear usually associated not with the names of their chiefs but with physical features or other characteristics of the village site or region itself. In the case of the 15 Juaneño communities referred to by Boscana, he provided glosses for the native names of these rancherías, giving us some idea as to the cultural content reflected in them. Harrington's consultants provided similar translations of other ranchería names.

Clan designations in turn were sometimes derived from the names of the principal settlement within a clan territory. In other cases, however, the clan designations recorded by Harrington, Strong, and others among interior Takic-speaking groups amounted almost to nicknames. They referring sometimes to remembered events in the history of a group, such as the once flooded-out Desert Cahuilla clan Wantcauem, meaning "touched by the river" (Strong 1929:41-42). The significance of the ranchería names listed in the mission sacramental registers has been the object of some debate. Briefly put, the discussion revolves around whether all of the places mentioned in association with baptized people are really rancherías in the sense of permanent "clan-capital" villages. It has been argued that such named places may be temporary or seasonal habitation sites, on the one hand, or perhaps territories encompassing several permanent settlements, on the other.

4.2.3 Identifying Villages of Birth and of Residence in Sacramental Register Entries

In discussing the historical records on native population used in this study, we would like to clarify how associations between native people and their communities are identified in the

mission records. Entries in baptismal registers typically indicated that people baptized or their parents were "from the ranchería of "nnnn". This begs a question, of course, since we want to distinguish between villages of birth and villages of residence, particularly for possibly out-marrying females. Confusion over this point has been a principal stumbling block in the study of marriage patterns. Johnson (1988b:22-24) discusses this issue of native village associations in relation to his Chumash research.

We discuss this problem in relation to females at greater length below. We should note here that the fundamental difficulty presented by many mission sacramental register entries was the missionary's difficulty in understanding that a person's village of origin and village of residence could in fact be different.

4.2.4 Clarifying the "Village of Origin" of Females

Baptized females, whether children or adults, were identified with a "village of origin", just as men were. This would have been the ranchería that such women were officially listed in baptismal and other church records as originating from. However, as we discuss in our section on native marriage, a fundamental problem exists for the identification of natal village origins of adult married females. That is the fact that from 1777 through the end of the 1780s, missionaries at Mission San Juan Capistrano were successful in distinguishing between villages of birth and villages of marital residence for married women. After the latter date it became common, through the arrival of new missionary record-keepers, for a married woman's village of marital residence to be confused with her village of birth. Thus under the latter scenario married women resident in their husbands' village were listed in baptismal records as if they had been born there.

It is possible to distinguish two ways of listing female "villages of origin" in the baptismal registers. Priests who wished to be sure of the place of birth of a female elicited the name of the home village of her father, e.g.- "Yaunam, daughter of Niejaycon, Gentile of the Ranchería of Guiagua...". Such an entry is clear enough about where the woman was born, given what amounts to a specification of the village of residence of her parents.

The second type of entry simply listed a female as "...from the ranchería of NNNN...", which could mean either her community of birth or of current residence. For married adult women it frequently appeared to be the latter.

This creates a difficulty for calculating the pre-contact population of communities in which exogamous inter-village marriage is the norm. This is so because there exist two distinct ways of counting married women under such conditions. Village populations can be reckoned on the basis of counts of persons ever born there, regardless of their later places of residence, or they can be tabulated on the basis of actual residence at a certain point in time. The latter is, of course, the method used in formal census-taking, where residence rather than birthplace is what matters.

The approach undertaken in this study has had to rely to a great extent on data on alleged birthplace or village of origin. This is the case since for coastal Los Angeles and Orange Counties, whole families and villages were rarely baptized at once, so that the marital and residential connections between spouses not baptized together were not always apparent, making the residence based counting approach often inaccurate.

Between 1777 and the late 1780s the San Juan Capistrano missionaries did list married women according to where they were born, so data for this period reflected listings of all people, including out-married women, according to putative place of birth rather than residence. Under this scenario, while the in-marrying spouses of married men were not listed for the village where they actually lived, their censal place was taken, so to speak, by the out-marrying sisters of the resident males, who were listed as born at that village, although they had out-married and moved away. While this substitution of female in-marriers by out-marriers in the reckoning of local population sizes can only allow approximate calculations, it does serve to simplify the problem of keeping track of exogamously marrying women. This is important given the problems created by the unevenness of quality of marriage records at Missions San Gabriel and San Juan Capistrano. This has made it impossible to achieve complete identification of all marriage ties between communities, thus making residence-based counting of married women difficult.

After the end of the 1780s, however, the approach taken in recording the place of birth of married women in baptismal and marriage records at San Juan Capistrano changed. The missionaries began to treat all in-married women as if they had been born in their husbands' communities. This approach, while hellish for the accuracy of research on marriage ties, does clearly indicate what a married woman's village of current residence is. We thus know which spouses to lump with their husbands as residents of a given community.

We are, of course, faced with the awkward fact that this category of married spouses is treated in two different ways at different points in time in the San Juan Capistrano mission registers. The pre-1790 and post-1790 data in effect represent different definitions of community membership for married females. Nevertheless, a transposition of in-marrying and out-marrying females for the period before 1790 does allow us to approximately balance the equation for our purposes of gross community population counts. Nevertheless, it is important that this difficulty and its provisional solution be clearly understood. The key consideration, of course, is that the analyst must avoid counting *both in-marrying and out-marrying women* as components of the community population structure at the same time!

For the larger body of marriage data derived from Mission San Gabriel registers, the above problem of switched criteria does also exist, but is a little more difficult to deal with because the circumstances of a change in criteria is harder to definitely identify. In other words, we have a few cases of Puvunga marriage data from Mission San Gabriel where we don't know for sure if missionaries were automatically lumping females in their husband's village of origin or not. We will deal with this problem at greater length in the section on community marriage patterns.

5.1 Community Organization and Social Organization

The use of mission sacramental register information to reconstruct community population dynamics and social organization for Puvuŋa clearly depends upon the elaboration of a general model of social organization for the Gabrielino and other Takic-speaking groups. To begin with, defining what is meant by "ranchería" as an element of regional settlement and social organization is neccessary in order to make sensible use of mission register data. Defining what the political boundaries and social significance of the ranchería were is an essential problem in studying a community such as Puvuŋa.

The analysis of the place of native communities within a regional social system is hampered by the missionaries' zeal to structurally replace rather than work within ther framework of the traditional community. There was, in fact, a much less active interest in describing elements of native community organization on the part of the San Juan and San Gabriel missionaries, at least until after 1800, than had often been the case with missionaries in other regions of Spanish America during colonial times. Even elsewhere in California greater care had often been taken in this regard. In the case of the San Juan Capistrano and San Gabriel missions, it has turned out to be difficult to find specific descriptions of the locations of native rancherías, for instance, as was sometimes done elsewhere in California. For the period before the first decade of the nineteenth century we also lack consistent listings of who the native chiefs were. In addition, the fact that native communities were marked for abandonment meant that community household censuses were not carried out, as was typically done in native communities elsewhere in Spanish America.

As a means of getting past these difficulties, various ethnographic sources have provided important insights into social organizational issues. The utilization of these sources and the development of social organizational models is discussed below.

5.2 Models of Takic Social Organization

The community of Puvuŋa, the focus of the present analysis, was located in what has traditionally been called the territory of the Gabrielino or Tongva. This territory was in fact the domain of a group defined linguistically rather than politically. The Gabrielino, as a collectivity bound together by a common language and common culture, were not bound into a single political institution. Rather, a series of more localized independent political entities were spread across the landscape, entities which were often interconnected by ties of marriage, political alliance, and ceremonial reciprocity. The social structure of these localized political units and their interconnection through systems of regional reciprocity must be understood as part of a larger social institutional panorama involving Takic-speaking groups in southern California. To this regional perspective we now turn.

Edward W. Gifford (1916, 1918) was the first ethnologist to develop a comprehensive model of Takic-speaker social organization, emphasizing the functioning of a system of moiety exogamy among localized patrilineal clan groups. His formulation also attempted to delineate the relative place of the structural features of Takic social organization within the wider context of central

and southern California. Following this pioneering work , William Duncan Strong attempted to confirm the applicability of this general model in Southern California. This he did on the basis of field work carried out with a number of southern California Native American consultants in the early 1920's. Gifford and Strong claimed that various Takic-speaking groups of southern California were organized into exogamous localized clans belonging to one of two moiety divisions- Coyote and Wildcat. According to this model of social organization, families belonged to patrilineally-recruited lineages. Lineages of related male kinsmen combined into territorial clans under a single paramount chief. All of these clans, according to Gifford and Strong, were associated with one of two ceremonial divisions, the Coyote moiety or the Wildcat moiety. Members of clans belonging to one moiety were allowed to marry only members of clans belonging the other moiety. Thus individuals could not marry members of their own lineage or clan. This would have very important implications for how residents of various localized territorial clans scattered across the Southern California landscape interacted with one another.

Both Gifford and Strong collected information on clans listed by various consultants as existing among the Serrano, Cahuilla, and Cupeño. This information was rather inexact as far as clan boundaries were concerned. Among the Luiseño, a system of fragmented clan units was identified by Strong, units which constituted intermarrying groups or "parties". Strong was able to tease out sufficient historical details of the processes of nineteenth century disruption of clan organization among the various Takic-speaking groups that he was able to convincingly show how the "party system" among the Luiseño had evolved from fragmenting territorial clans. Strong and Gifford were able to apply many features of their general model of Takic social organization to the Luiseño. However, they did express reservations about the applicability of the moiety division scheme to the Luiseño clan system, and to other groups in the coastal region. This particular problem will be further discussed below.

5.2.1 Clans, Moieties, and Takic Social Organization

The elaboration of the field data of Gifford and Strong into a more coherent picture of social organization in southern California constituted a step forward from the kin terminology oriented work that had preceded it. Writing in 1917, Kroeber could still claim that "...there are but few clear indications of an association, regional or otherwise, between types of kinship systems and types of social institutions pure and simple..." in California (Kroeber 1917:382). He also noted that the existence of clans among the Luiseño was still in great doubt. He made this assertion because, at that time, much more was known about kinship terminology in California and southern California than about social organization. It had been relatively easy for Kroeber and others to collect kin terms from elderly consultants, but much more difficult for them to reconstruct social organizational features through the filter of nineteenth century disruptions. The work of Gifford and Strong addressed this deficiency.

Gifford was, first of all, able to identify the distribution of institutions of corporate patrilineal descent in southern California. This meant that kin group membership was passed from fathers to their sons. Female offspring were expected to marry into other such patrilineal communities and leave their own natal village. The strong corporate patrilineal organization of Takic-speaking

groups in in that part of the state contrasted with the forms of social organization found in the Great Basin heartland to the northeast whence the Takic-speakers had presumably come. That region was still occupied by members of another branch of the Uto-Aztecan language family, the Numic-speaking Southern Paiutes, Chemehuevi, Kawaiisu, and related groups. The latter, like other western Great Basin groups, were characterized by much more fluid non-corporate and non-patrilineal forms of community social organization. These emphasized that membership in the community or social group could be based on descent from either the male or female parent- so-called bilateral descent.

Gifford (1918:217-218) had also identified the presence of both clans and dichotomous organization (moieties) in southern California.It should be emphasized here that Gifford's use of the term clan alluded to local territorial patrilineal social units, and not to the clan as a sort of territorially dispersed special-purpose sodality. The clan was seen as both a corporate kin unit and a maximal political and ceremonial entity which exclusively occupied a defined territory.

Gifford had posed two alternate hypotheses concerning the spread of clans and moieties. On the one hand, both forms may have originated on the coast, perhaps among the Gabrielino, the moiety system spreading to the north (Yokuts, Miwok) as well as to the east, and the clan system spreading to the east and south, including the Diegueño and Colorado Yumans. He noted that while both institutions could be found among most of the Takic-speaking groups of southern California, the clan was absent among the Yokuts and Miwok to the north who had absorbed moiety organization, while moiety organization was missing among the Diegueño and Colorado Yumans to the south. Gifford's second alternative hypothesis was that the two institutions, the clan and the moiety, had diffused from different regions of origin.

Strong, writing in the late 1920s, was inclined to accept the former view. He emphasized that research since 1918 had suggested a diffusion of both clans and moieties in the direction indicated. Strong pointed out not only the diffusion of cults from the coast, but also what he saw as a very ancient diffusion of clan concepts- the central importance of the clan chief, the sacred bundle, and the ceremonial house- from the same source (Strong 1929:344).

Strong, throughout his treatment of Takic social organization, emphasized the special importance of a clan as opposed to lineage concept. While recognizing the ubiquity of patrilineage organization in southern California, he stressed that the organization of lineages into clans was a distinctive trait missing in other neighboring regions. For him the key element in such clan organization was the fact that the clan chief, the sacred bundle, and the ceremonial house were clan rather than lineage institutions. They defined a node of sacred leadership and ceremonial reciprocity which lineage units alone could not command. Thus an integration of constituent lineages in support of this chiefly ritual prerogative clearly defined the clan as a ceremonial nexus and political corporation. The social and political characteristics of lineages were in this respect very different.

Strong also suggested that the widespread distribution of moieties in southern California relative to the narrower distribution of " ritual chief-sacred bundle-ceremonial house" clans did not indicate the historical priority of the former. He claimed that clan organization was more socially

fundamental and moiety organization a later pan-regional introduction, which may have been open to a certain amount of local reinterpretation from area to area. He also noted that kinship terms from the Takic-speaking groups in question clearly reflected an emphasis on lineage and clan organization rather than on moiety organization, thus suggesting the primordiality of the former. That terminology, characterized, in George Peter Murdock's classificatory scheme, by Iroquoian cousin terminology and other characteristics of what has been called Dakota type social structure, is associated with patrilineal societies with independent polygynous or extended patrilocal residence (Murdock 1949; White 1963:168).

The formal ties of reciprocity linking different territorial clans were seen as constituting the most fundamental political structuring mechanism at the regional level. The functioning of a moiety system among at least some Takic-speaking groups represented one means whereby this web of reciprocity could be organized. Strong emphasized an association between moiety organization ("dichotomy") and the tendency toward ceremonial reciprocity between longstanding partner clans. He discussed the relative importance of the regulation of such ceremonial reciprocity and the regulation of marriage as functions of such moiety organization. He reached the conclusion that the former function of structuring of ceremonial reciprocity was more fundamental and important than the regulation of marriage. This view seems in accord with Strong's evidence for the absolutely tremendous importance of regulation of ceremonial reciprocity as a moiety activity in historic times. Strong saw the regulation of marriage function of moiety organization as strongest among the desert Cahuilla and less strong elsewhere, particularly towards the coast (Strong 1929:344-345). In commenting on Strong's work in the 1920s, Bean (1972:XV) notes that Strong's concern about the possibly diminished importance of moiety regulation of marriage among some Cahuilla groups was probably unfounded. David Earle has also heard Cahuilla commentary to the same effect.

Strong also attempted to place his and Gifford's findings in a deeper historical context, through the examination of possible links between coastal California and the American Southwest (Strong 1926). A discussion of these arguments is beyond the scope of this study. Nevertheless, Strong did emphasize the special characteristics of the patrilineage and clan organization found in southern California. He pointed out the contrast which it represented to much simpler forms of more bilaterally-oriented social organization found in the Great Basin in historic times.

A counter-model of marriage and social organization was developed by Raymond C. White in the 1950s, based on ethnographic fieldwork among the Luiseño. White undertook a close analysis of Luiseño kinship terminology and attempted to reconstruct the social and political functions of corporate social units within this group. In doing so, he took a rather radically different approach to the problem of the relationship between the village or rancheria as a territorial unit and the lineage as a corporate kin unit.

Now it is clear that Gifford and Strong conceived of rancherias "on the ground", as it were, as concrete expressions of the organization of exogamous localized clans. White took a different and novel approach to this problem. He recognized, as had Kroeber, Gifford, and Strong, that the kinship terminology utilized by Takic-speakers in southern California emphasized unilineally

recruited corporate groups. He also recognized, as had Kroeber, that these unilineal groupings in southern California also emphasized strongly reciprocal relationship terms between persons not members of the same lineage, as for example between MoFa and DaSo. These lineage-crosscutting reciprocal terms suggested to White that the Gifford-Strong scheme of rancheria, lineage, and moiety exogamy had to be modified.

He claimed that while both lineages and an exogamous moiety system, as institutions, did exist among the Luiseño, these social units operated *within* rather than *between* rancheria communities. His argument was essentially that while moiety exogamy did exist, individual rancherías were endogamous, emphasizing cross-cousin marriage between lineages within each rancheria, lineages which belonged to opposite moieties. The implications of this scheme for models of Luiseño subsistence and settlement were dramatic.

White's evidence for the existence of moieties among the Luiseño essentially can be reduced to an argument based on the presence of reciprocal ceremonial relations between units we would refer to as clans, particularly the so-called "not road", the special set of reciprocal protocols existing between chiefs themselves (White 1963:162-165). He conceived of Luiseño rancherías as being internally divided between kin groups of opposite moiety affiliation, in somewhat the same manner as were Yokuts communities, for instance.

Strong also discussed the possible existence of moieties among the Luiseño. He noted a mourning ceremony origin myth and other circumstantial evidence bearing on the possible existence at one time of a moiety division system among the Luiseño (Strong 1972:288-291). He noted that only for Luiseño living at Soboba did he or Gifford find testimony from consultants for the aligning of clan units into moiety halves. He noted the severe challenge presented for the analysis of this problem by the development in historic times of the so-called "party system", whereby remnant clan units of various traditional affiliations banded together into "parties", which shared ritual activities. Strong goes on to say the following:

> From its distribution through many portions of the mountain region, from the Cupeño to the northern Miwok, it seems probable that the moiety was strong in the mountains, and in company with certain other customs survived there after it had been replaced by other institutions along the coast [Strong 1972:291].

Nevertheless, White's conception of Luiseño/Juaneño marriage patterns and social organization has had considerable influence. Beals and Hester (1974:122-126) were allowed special access to his field notes, and their federal native claims court depositions on the Luiseño followed White's formulation closely. Koerper (1991) has also discussed the White model.

However, this author's research on marriage between Serrano villages in the upper Mojave River-Cajon Pass region has indicated that for the period betwen ca. 1770 and 1815, some 80-90 per cent of marriage ties were contracted between individuals born in different rancherias (Earle 1991). Additional research on marriage ties between Juaneño and Gabrielino communities in Orange County revealed a similar rate of community exogamy (Earle 1993). The latter research, based on data from the San Juan Capistrano marriage registers covering the 1776-1790 period,

clearly shows that marriage among Orange County rancherías was exogamous. It thus seems possible to show that White's model cannot be valid.

A more vexing problem for our analysis of social organization at Puvuŋa is the issue of the functional importance of the moiety as a regulator of social relations. Strong felt that this institution was hard to identify ethnographically among the Luiseño, as we have noted above. He suggested that it may have ceased to play an important social role on the coast by the time of the arrival of the Spanish.

Our own research in Orange County seems to support this view. Our investigation of marriage ties between Juaneño and Gabrielino communities in that region indicates patterns of ramifying ties which make moiety regulation of marriage in that area appear inoperative. These ties indicate a pattern in which a community may maintain marriage ties with six or eight other rancherías located within 15-20 miles [23-32 km.] distance. It is certainly possible that the greater propinquity of permanent village sites in the coastal regions led to the abandonment of the moiety system there. The patterns of community fission accompanying population growth, with the splitting off of subordinate lineages as independent clans, would also create structural difficulties for the functioning of a system of moiety-regulated marriage.

The difficulty which we face in dealing with a confirmation of the decline of at least the marriage regulation function of the moiety among the Gabrielino is the unevenness of the quality of marriage register data at Mission San Gabriel. Despite these difficulties, future research should help shed light on this problem.

6. Puvuŋa / Pububit

The ranchería of Puvuŋa or Pububit was located two miles inland from Alamitos Bay. This ranchería is famous as the site from which, according to Boscana, the religion of Chinichnish originated in its spread southward to Juaneño territory. (Boscana 1933; Johnston 1962: 39). That Gabrielino and Juaneño culture hero was said to have been born at this ranchería.

In our discussion of the population and social organizational characteristics of Puvuŋa, we will attempt to relate our mission sacramental register data to other ethnographic sources. These sources include the writings of Father Gerónimo Boscana and the research notes of ethnologist John Peabody Harrington.

6.1. Puvuŋa in Native Regional Cultural History

It seems increasingly clear as we study the political geography and cultural history of southernmost Los Angeles County and of Orange County that there exists a strong historical cultural connection between Gabrielino and Juaneño communities in these areas. The suggestion of the particular cultural connection between southern Los Angeles County Gabrielino places and the Juaneño settlements was first broached in Boscana's account of Juaneño traditional knowledge and sacred lore (Boscana 1933). Boscana's prominent mention of both the history and importance of the Chingichnich religion and the migration of the Juaneño culture heros Oyaison and Putiidum from the Gabrielino ranchería of Sejat to the San Juan Capistrano region was a source of some consternation among scholars.

Father Gerónimo Boscana served at Mission San Juan Capistrano from 1812 to 1826. During his residence there he collected ethnographic information on native life, covering a wide variety of topics. One version of the account which Boscana wrote on the basis of this information was translated and published by Alfred Robinson in the 1840s. This account consequently became well known. It was of particular interest on account of its description of native religious beliefs, particularly the so-called cult of Chingichnich. The latter was a native deity which had originally assumed human form on earth, and which had established a distinctive set of religious and moral practices for native peoples in the region.

Alfred Robinson's translation of the account was republished by John Peabody Harrington in 1933, accompanied by copious annotations based on Harrington's fieldwork with native consultants in the region. However, Harrington also discovered a second variant version of the Boscana account which he published in 1934 (Harrington 1934). The two versions contained somewhat different descriptions of certain key elements of native religious traditions.

Because of the description of sacred places and events associated with known Gabrielino rancherías, the question arose as to whether the accounts of Boscana's really dealt with the Juaneño, or perhaps were based on information provided by the Gabrielino. Kroeber commented:

> It has been generally assumed that this work referred to the Juaneño; but analysis of its native terms and designations of place leave a doubtful impression. A large part, possibly the bulk, of the information conveyed by the assiduous and sympathetic priest is certainly of Gabrielino origin. What is questionable is whether the lore was taken over by the Juaneño from the Gabrielino of their own accord and in premission times, as part of the Chungichnish cult or as the effect of still earlier streams of Gabrielino culture; or whether the father reported data from local Juaneños and imported Gabrielinos side by side without thinking it worth while for his purposes to specify the tribal differences. On the one hand, we know that the Gabrielino influence existed, for it prevails among the more distant Luiseño. On the other hand, the mission was but a very few miles from the Juaneño boundary, and southern Gabrielino converts must have become attached to the establishment in considerable numbers. The problem cannot be answered with exactness... [Kroeber 1925:636-637].

Both the Gabrielino communities of the lower Santa Ana River drainage and the Juaneño communities of the San Juan Canyon region were linked *before* mission times by intermarriage and other forms of cultural and linguistic interconnection. We would propose to answer Kroeber's query to the effect that the "lore" in question had been received by the Juaneño in pre-mission times. We will now present additional information bearing on this pre-contact flow of cultural information through the region.

J. P. Harrington published a very thoroughly annotated edition of the Robinson version of Boscana's manuscript in 1933 (Boscana 1933). Harrington's exhaustive annotations incorporate many additional ethnographic and ethnohistorical insights on the natives of the San Juan Capistrano and Orange County regions, these based on his own research. His preparation of his annotations, which really constituted an analysis of the Chingichnich phenomenon, was carried out without any apparent significant incorporation of information from the Cessac version of Boscana's work, which Harrington published in 1934. It seems possible, as Bright suggests, that Harrington had discovered the Cessac version before the Robinson version went to press, but it was not discussed in his analysis (Bright 1978:iv)

Several discussions of these two Harrington-edited versions of the Boscana account, by Kroeber (1959) and White (1963), appeared after Harrington's publications were issued. It is clear in comparing the two versions of Boscana's treatment of native religion that some important differences in interpretation of the Chingichnich cult existed in the two versions. In particular, a chapter entitled "Of The Creation of the World According to the Belief of Those Residing on the Sea Coast", which appeared in the Robinson version, was suppressed by Boscana from Harrington's 1934 version with the comment that it lacked credibility. As both Kroeber (1959:292) and Bright (1978:v-vi) have pointed out, the two versions treat the manifestation of Chingichinich differently. The Harrington version, in which Boscana cited information from natives of the Juaneño-Luiseño interior, spoke of a "spectre" in various guises having appeared and disappeared. The suppressed original version, allegedly obtained from coastal peoples, speaks of Chingichnich having been born at the Gabrielino village of Pubuna (Puvuŋa), commencing a life span in which he manifests his supernatural identity.

Now this coastal account of religion also refers to Pubuna as the place of origin of the "monster" chief Ouiot, who was said to have become increasingly ambitious and cruel to his subjects, eventually being driven into exile by his people. This account seems shocking, since Ouiot or Wiyot, a creator diety central to Juaneño-Luiseño stories about the origin of the world, was not at all a malevolent figure, and he does not fit into the suggested historical time frame at all.

We do have information, as alluded to previously, that a chief named Oyaison and his daughter Coronne were said to have emigrated from Suká (Saká in Juaneño) to the San Juan Capistrano area in ancient times, where they founded the ranchería of "Putuidem" [Putiidum] (Boscana 1933:202 & ff.). This migration tale highlights the issue of movement of population across putative linguistic boundaries in our study region in prehistoric times. Boscana says:

> When the Indians came to settle in the Valley of San Juan Capistrano, they spoke a language somewhat distinct from the one now in use, and in a dialect not

> dissimilar to the one used in San Gabriel. They say the cause of the variation originated with their chief, Oyaison, who told them that, as they were to change their place of residence they were neccessarily obliged to alter their mode of speech as well as their customs, in order to become a distinct nation [Boscana 1978: 85].

That this movement was not associated with Mission times and the European invasion is suggested by the fact that the name Coronne or Coronni is sometimes encountered as a gentile name among native women baptised at the San Juan Capistrano mission. About the use of this name the Robinson version of Boscana's account says the following, in connection with the founding of Putuidem by the chief Oyaison and his daughter Coronne:

> In the course of time, owing to the scarcity of grain, many of the inhabitants [of Puituidem] separated and, by permission of Coronne, located themselves about in different parts of the valley of San Juan. In this way originated the many small villages and towns which were met with in the route to Putuidem.
>
> A custom was observed in all their new settlements to appoint as chief or captain the eldest of the families, and to him was given the name of Nu, and to the second in power, of Eyacque. Their wives were named also, the first, Coronne, and the second, Tepi. ... The first was given to the wife of the chief, in commemoration of the *capitana* of Putuidem. [Boscana 1978:84]

The terms Coronne and Tepi, along with Nú, appear with some frequency in the mission registers at San Juan Capistrano. Boscana suggested that such bestowal of the name would have been done in honor of the mythic hero Coronni. However, various of the individuals so baptized who bore the name Coronni were born decades before the European invasion. Thus barring some unreported phenomenon of a mass renaming of the female population on account of a conquest-era cult of Coronne, this evidence would appear to support the notion that the emigration of Oyaison and Coronne occurred well before 1769. It is possible that the story of the ambitious, troublesome chief Ouiot who had to flee Pubuna according to Boscana, was somehow intercalated with the saga of the culture hero chief Oyaison who emigrated from Suká.

Yet the gloss put on Chingichnich by Boscana and later writers is linked to a more fundamental historical controversy. Both Boscana and Harrington were interested in portrayals of Chingichnich as a sole godlike figure. Boscana portrayed Chingichnich as a stern, morally righteous Old Testament law-giver who demanded that his image be worshipped by the faithful in a special sanctuary. The singularity of this type of deity "personality" in the context of Juaneño-Luiseño and more generalized Takic-speaker religious ideology certainly fueled later speculation that the "cult" of Chingichnich was a product of reaction to the Spanish conquest, that is, a revitalization movement..

Harrington, for his part, speaks of Chingichnich as "a prophet...born at the ranchería of Pubu" (Bright 1978:v). Harrington cited coastal and Gabrielino sources as indicating that Chingichnich had been *born* at Puvuŋa. Harrington maintained that as a youth and an adult there he used the

names Saúur and Toovet, then later became the god Chingichnich and founder of the Sahoovet cult, before ascending to heaven under the name Kwá`owar. He also accepted the "Old Testament" characteristics of this deity, which he referred to as "searcher of the human conscience, chastizer, all-seeing one" (Harrington 1978:245).

As we have noted, comparison of the coastal and inland versions of the Chingichnich stories indicates some differences in belief related to this deity between these two regions. Abundant ethnographic testimony gathered by Harrington himself makes it clear that Chingichnich was not recognized as just a single all-powerful god but also a pantheon of supernatural entities. Many consultants spoke of Chingichnich in the plural. The Chingichnichyam were charged with keeping order in the world. Such supernatural manifestations were associated with magical caves and springs which served as entryways to the spirit world. The name Chingichnichyam meant "sabios" or "wise ones" (Harrington 1986: Reel 104: Fr. 106). Sparkman (1908:218-219) associated this class of spiritual operatives with the *cuervo* or raven. He expressed doubts about the version of the 'Chingichnich cult' presented in Robinson's edition of Boscana. Of particular importance to Sparkman was an appreciation of the fact that the Chingichnich figures were propitiated through community ritual offerings, and were not the object of some sort of monotheistic worship. While his skepticism about Chingichnich as an anthropomorphic culture hero seems misplaced, he was correct in emphasizing that the deity was also manifested in a supernatural pantheon.

It thus is suggested that several versions of Chingichnich stories may have existed in different regions, and that between the interior Luiseño and the coastal peoples at San Juan Capistrano different degrees of emphasis may have been placed on Chingichnich appearing in the form of a single deity as opposed to his manifestation as multiple sacred representations. It also seems possible that Boscana's European Christian conception of this cult emphasized and perhaps over-emphasized Chingichnich as a singular anthropomorphic divine being and lawgiver rather than as a plurally manifested divine force, removing the nuances of Juaneño/Luiseño cosmovision and religious belief.

In any regard, the notion that beliefs about Chingichnich were simply the product of native exposure to Christianity does not appear in accord with the native testimony and historical information we now have available to us. Information provided by native peoples to Boscana and later writers indicates that the birth of Chingichnich at Puvuŋa occurred in prehistoric times. This is corroborated by archaeological and historical information. The supernatural events associated with Puvuŋa make it a particularly sacred region for native people in southern California.

6.2. Population Reconstruction- Puvuŋa

We have previously discussed a series of considerations bearing on the use of sacramental register and other population information to reconstruct community population magnitudes at

Spanish contact. In the case of Puvuŋa, there exist a number of historical and sacred references to the place which indicate that it was an important community in prehistoric times.

The sacramental register data for this community come from both Mission San Juan Capistrano and Mission San Gabriel. We find three classes of individuals associated with the community listed in church registers. These are, first of all, baptized persons "originating" at Puvuŋa. This means that either the individuals listed or their male parents were born at Puvuŋa. The second category is of baptized persons married to individuals of Puvuŋa origin. The third category is of non-baptized (gentile) individuals who were associated with Puvuŋa through either birth or marriage.

At Mission San Juan Capistrano, 4 individuals resident at Puvuŋa were baptized, as indicated in Figure 2. Two additional individuals were associated with the place in sacramental records, one as an unbaptized non-Christian originating there and the other as a spouse of a baptized Puvuŋa resident.

At Mission San Gabriel at least 40 additional people who were baptized were associated with families of Puvuŋa origin, for a total of 46 individuals. Of this total, some 28 were alive in January of 1793 (Fig. 4). Of this total of 28 living at that date, 15 were males. Of the total figure of 46 individuals, several were either second wives of Puvuŋa residents who had remarried at the missions, or were children born at the missions. However, for purposes of reconstructing family and community demographic characteristics, including these individuals in our database is important.

Table 1: Identified Persons Born at or Resident at Puvuŋa

Baptism No.	Baptism Date	Sex	Christian Name	Gentile Name	Village of	Date of	Date of

					Origin	Birth	Death
Persons Identified at Mission San Juan Capistrano							
508		M	Cleto	Zavanga Minanamovit	Puvuŋa	1760	?
650		F	Mathia Anna	Sinongueraram	Jucuvit	1761	?
(NA)				Cenanguereramovit	Puvuŋa	?	?
651		F	Hilaria María	Tukupararguia	Puvuŋa	1761	?
654		F	María Augustina		Puvuŋa	1775	?
968		M	Ponancio	Juchnus	Puvuŋa	1775	?
Persons Identified at Mission San Gabriel Arcangel							
1138	1/1785	F	Catalina Josepha		Puvuŋa	1763	
1174	4/1785	M	Leonicio Joseph		Puvuŋa	1771	
1216	7/1785	M	Francisco Antonio		Puvuŋa	1782	
1589	8/1788	F	Ciriaca Antonia		Puvuŋa	1766	
1666	2/1789	F	Aurelia Josepha		Puvuŋa	1767	
1675	2/1789	M	Ramón Miguel		Puvuŋa	1777	
1715	4/1789	M	Pacifico Juan		Puvuŋa	1749	
1978	1/1791	M	Ambrosio Miguel		Puvuŋa	1787	
1979	1/1791	M	Anacleto Rafael		Puvuŋa	1791	
1992	2/1791	M	Pedro Nolasco		Puvuŋa	1776	
1999	2/1791	F	Marcelina Juana		Puvuŋa	1777	
2074	4/1791	F	Agustina María		Puvuŋa	1788	

2081	4/1791	F	Macrina Anna	Puvuŋa	1787
2087	4/1791	M	Eliseo Gabriel	?	1780
2140	8/1791	F	Juliana Maria	Puvuŋa	1760
2149	9/1791	F	Claudina María	Ajuibit	1791

Baptism No.	Baptism Date	Sex	Christian Name	Gentile Name	Village of Origin	Date of Birth	Date of Death
2188?	12/1791	M	Juan Evangelista		Puvuŋa?	1791	
?		M	Gerardo Francisco		Puvuŋa?	?	
?		F	Leonisia María		Hutukŋa	?	
2336	4/1793	F	María del Pilar		Puvuŋa	1758	
2379	9/1793	M	Joseph		Puvuŋa*	?	
2832	6/1797	M	Laureano		Puvuŋa	1797	
2973	10/1798	F	Theresa de Jesús		Puvuŋa	1798	
3056	8/1799	F	María de la Trans-figuración		Puvuŋa	1794	
3058	8/1799	M	Lorenzo de Sta. Clara		Puvuŋa	1790	

3180	11/1800	F	María Cecilia [married to Capítan]		Yangna	1740	
?			[Capitán]		Púuvit [Puvuvit?/ Puvuŋa?]	?	
3267	4/1801	F	Anizeta		Naásim [listed as of Puvuŋa origin at death]	1801	
3362	5/1802	F	Monica María		Hutukŋa [listed as of Puvuŋa origin at death]	1802	

Baptism No.	Baptism Date	Sex	Christian Name	Gentile Name	Village of Origin	Date of Birth	Date of Death
3373	6/1802	F	Nicolasa Pico		Pububit	1802	
?		M	Juan Clímaco		Hutukŋa	?	
?		F	María Antonia		Hutukŋa	?	
?		F	Gabriela Josefa		Hutukŋa	?	
3452	3/1803	M	Damián		Jaisobit	1779	
3454	3/1803	M	Adalverto		Puvuŋa	1781	
3456	3/1803	F	Damiana		Puvuŋa?	1783	
3458	3/1803	F	Veronica		Puvuŋa	1753	
3592	11/1803	M	Valeriano	Guanauseraroto	Puvuŋa	1728	

3646	2/1804	M	Enodio	Sanaugagua	Puvuŋa	1758
3647	2/1804	F	Enodia	Alagul	?	1762
3810	10/1804	F	Fortunata		Puvuŋa	1754
3943	3/1805	M	Fermín	Michuis	Jautbit	1765
4054	1/1806	F	Rústica		Amutscupiabit	1797
4533	4/1810	F	Nicolasa		Mission San Gabriel	1810
5752	8/1815	F	Dominga		Mission San Gabriel (Puvuŋa)	1815

6.2.1 Age-Sex Ratio Population Estimation

Unfortunately, we find only three additional individuals listed by name or political title who are mentioned in the San Gabriel Mission baptismal register but who were not baptized. This circumstance contrasts markedly with what we find for a number of communities whose members were brought into Mission San Juan Capistrano (Earle 1993). This seems, however, to be due mainly to the fact that the senior generation gentile kin of baptized individuals were often not recorded by name during the early decades of the maintenance of the San Gabriel baptismal registers.

This omission makes it more difficult to apply age-sex ratio techniques for reconstructing community populations. This is the case because the method could take account of living unbaptized adult individuals who lacked precise age information and incorporate them into an age and sex structural model. Without a specification of the names of unbaptized adult individuals it is dificult to count them for reconstruction purposes, since one can end up counting the same individual over and over.

Our population structure adjustment yields a total adult population of 20 in 1793, and a baptized juvenile population of 11 people. The ratio of juvenile to adult population (11:20) is close enough to the model age proportion ratio value (13:20) that the use of this correction factor would not be appropriate. The application of the census error test yields a 25.7 percent probability that the difference between our real age ratio data and our model ratio values is due

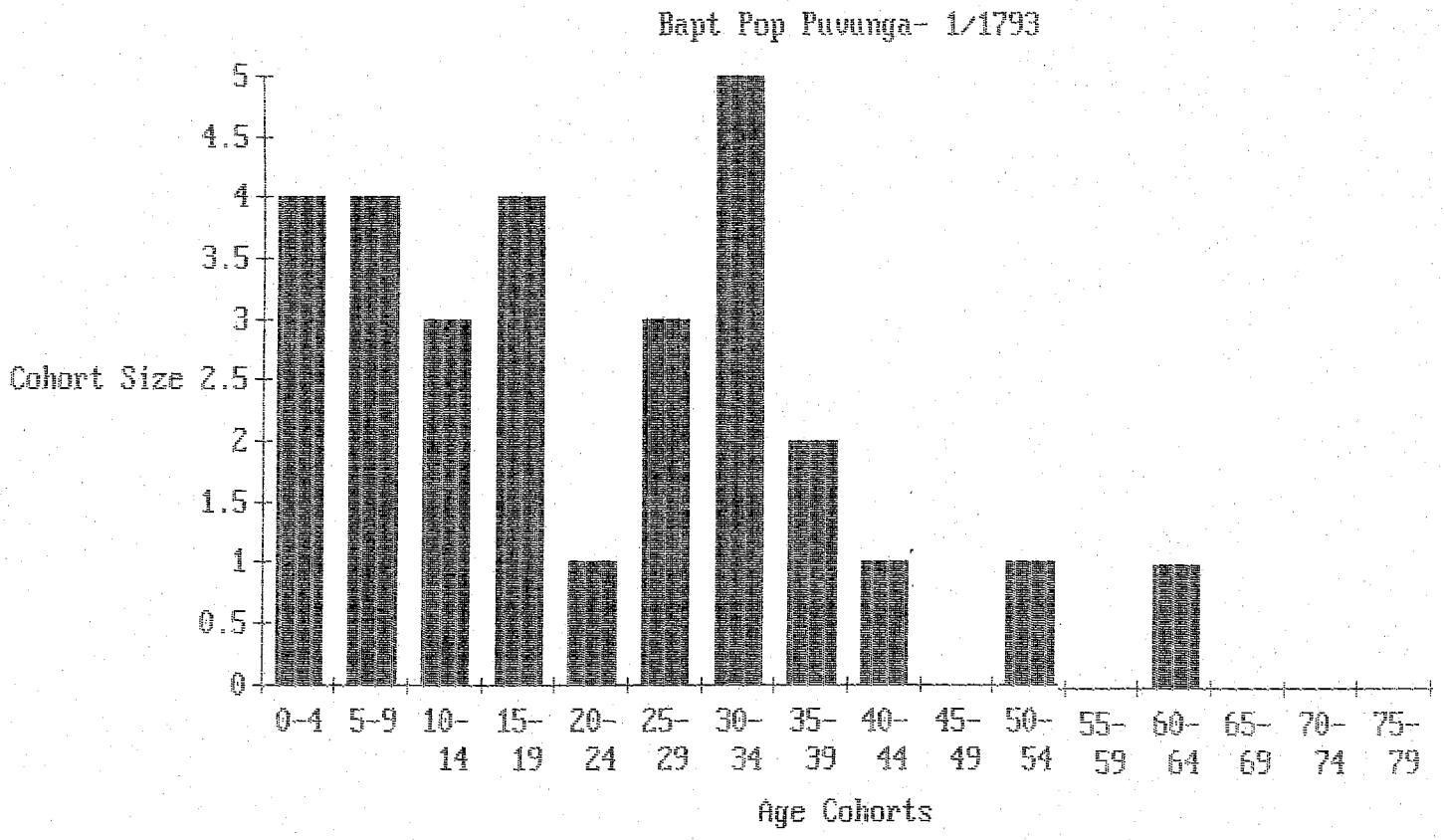


Fig. —: Baptized Population of Puvunga - 1/1793.

only to statistical chance, considerably above our 5 percent significance threshhold. We thus estimate a population for 1793 of 31, using this estimation method.

We have mentioned that the lack of sufficient details from the San Gabriel Mission sacramental registers about unbaptized parents of the neophytes from Puvuŋa appears to have affected the volume of the population reconstructed here. The figure of 31 seems very low, given what we know about community population magnitudes in various areas of southern California at the end of the late prehistoric.

6.2.2 Family Reconstitution Analysis

An alternative and complimentary approach to the population reconstruction problem has already been mentioned, namely family reconstitution analysis. This technique focuses on the reconstruction of community populations from the standpoint of identification of constituent family units. In the case at hand, the principal difficulty encountered in identifying such units is the problem presented by the tracing of possible sibling ties between baptized individuals. In other words, we can identify a number of baptized juvenile or adult offspring of unbaptized and unnamed adult gentiles. These individuals and their living or deceased unbaptized parents may be taken to represent individual family units associated with the ranchería of Puvuŋa. The difficulty we face in determining how many of these family units there actually were in total is the problem of counting different sibling children of the same gentile parents as representing different households. We have this problem because the parents of these baptized indviduals are in many cases not named, so we don't know which of the listed baptized individuals may be related.

Reviewing our family reconstitution data for Puvuŋa, we have identified some eight families with members originating from that village, the families consisting of named parents and children. Most of the individual's names are Christian names given at baptism, but a few are native names, as indicated in Table 1. The fact that one or both parents are named makes it possible to distinguish the family units from one another. There are two additional family units originating at other rancherías whose daughters were noted as having been listed in their burial register entries as nominal residents of Puvuŋa. The latter suggests that these women had married men from Puvuŋa, although the possible identities of such husbands remains a mystery.

In addition, we have a total of sixteen baptized individuals about whose parents we know nothing. The parents are not listed by name in the documentary evidence, because of their children having been baptized at San Gabriel by sloppy missionaries before 1800.. As we have mentioned, it is difficult to decide as to the family status of these baptized offspring, since we don't know if any of these sixteen may be siblings or otherwise closely related to one another.

For purposes of formulating a very preliminary estimate of the minimum number of households existing at Puvuŋa, we can include both our known households and a certain percentage of the baptized offspring without named parents, perhaps one-fourth of them. What this latter means is

that we estimate that it is likely that our 16 offspring represent a minimum of three or four different additional households not previously mentioned. We thus can arrive at a minimum estimate of some 12 to 14 households existing at the community, giving us a minimum population estimate of some 48-56 inhabitants. This is calculated on the basis of an estimate of four inhabitants per household, which is also a conservative figure.

We would also note that for people of Puvuŋa origin it was possible to identify some 18 gentile and mission marriages in our analysis of regional marriage ties. This is a lot of marriages for a community yielding such a low reconstructed population. We thus can be quite sure that the population of Puvuŋa was higher at contact than our baptismal age structure ratios would indicate.

In fact, we would expect that the *minimum* contact-era population of Puvuŋa could be placed in the sixty to ninety person range, and could have been higher. This figure is more consonant with our marriage data than the reconstruction estimate given above or the raw baptismal register counts.

We note elsewhere that age-sex population structure reconstruction techniques applied to communities with more complete population data have yielded totals suggesting that an approximate two to one ratio may exist between minimum contact population and the *total* number of reported baptisms for a community. The discrepancy between the two figures can be accounted for particularly by the fact that 1) deaths among juveniles in the community before and after baptism appeared to occur at an unusually high rate, and 2) many adults in the community were for whatever reason never baptized. These two factors combine to reduce the percentage of the contact-era population which ends up being reflected in subsequent baptism-based community population numbers.

6.3 Marriage Ties of the Rancheria of Puvuŋa (Pububit)

6.3.1 Community Marriage Patterns And Marital Exogamy

We have already alluded to the possible significance of patterns of exogamous or endogamous marriage at Puvunga as diagnostic of important characteristics of Takic social organization. In our previous discussion of models of Takic social organization the issue of marital exogamy has arisen as an important point of contention..

This debate over community exogamy can be placed in the context of traditional anthropological conceptions of marriage and spouse selection. Social anthropology in its early decades of development emphasized the analysis of corporate unilineal kin groups. This approach focused attention on marriage as a relationship between social groups rather than as mate selection within a gene pool of a particular demographic magnitude. Marriage was treated as a mechanism of exchange between corporate descent groups. Even in the debate between partisans of alliance and of descent as alternative social organizational principles the primacy of the corporate group

in structuring marital behavior was assumed. This approach treated the analysis of corporate group exogamy as the proper means of studying marriage choice.

This approach suffered from several deficiencies. First of all, it traditionally emphasized reported spouse selection rules rather than collecting sufficient behavioral data to determine what spouse selection behavior really looked like on the ground. This emphasis on norms rather than behavior was partly a product of the traditional community fieldwork micro-focus of ethnographic research. The collecting of quantitative data on marriage links between members of a number of communities forming regional networks of marriage interaction was difficult to achieve within this community micro-focus.

A second theoretical problem associated with this focus has been a lack of discussion of the purely bio-demographic constraints on marriage choice within different kinds of social systems. It has tended to treat exogamy in relation to the corporate structure of the intermarrying groups rather than the demographic characteristics of these local populations.

There has long been claimed a strong ethnographic association of both patrilocal territorial groups and fully corporate patrilineal groups with exogamous marriage (Owen 1965:666; Service 1962:59-109). This association of corporate unilineal kin groups with exogamous marriage has led to a focus on this pattern of marriage as a vehicle of either local alliance or regional integration. Emphasized here is the cross-cutting effect of affinal linkages. Kang (1982) carried out statistical correlation research on cross-cultural data bearing on the connection between exogamy, marital alliance, and conflict damping. She pointed out that such affinal ties between corporate groups can be treated as alternatively contributing to alliance or to conflict. Kang notes that cross-cultural data from the Human Relations Area Files indicate that corporate patrilineal groups are associated with warfare more frequently than are non-corporate bilateral groups, and suggests that patrilineage male solidarity is consistent with this tendency.

It certainly is possible to view exogamous marriage as a likely social strategy when patrilocal/virilocal residence maintains males in their natal communities, and the size of patrilocal groups is small enough that spouse availability from within the group becomes a problem. The latter is certainly apparent in groups of under 100 people. Small group size is particularly important because of the threat that squabbling over local women implies for corporate group male solidarity.

Here, however, recognizing the bio-demographic factors which place lower limits on the size of communities that can effectively in-marry, we also recognize several different kinds of exogamous linkages. On the one hand, we have the concept of widespread inter-group marital and other reciprocal ties networking across a region, serving to integrate constituent corporate groups in the area. On the other hand, we have the notion of preferential and intensive marital and other exchange between two corporate groups. According to this latter scenario, certain corporate kin groups maintain special relations of amity and reciprocity with certain other groups, but these are exclusive, and do not indicate some generalized network of inter-group reciprocity. The latter kind of arrangement is certainly reconcilable with relatively high levels of regional inter-group conflict and feuding.

The application of our traditional concept of exogamy has been tied up in the identification of unilineal corporate kin groups. If we were to discuss bilateral kindreds, for instance, we would need new definitions of what constituted "out-marriage", since convenient group boundaries would not be readily at hand to define it. We will discuss below an alternative approach to marriage patterns, focused more on population size than kin group structure. This relates to our concern that demographic processes in marriage should not be ignored in favor of a focus solely on kin units. An example of the demographic issues which underly the social dimensions of marriage is the argument that the development of true patrilocal non-composite bands, and their transformation into corporate patrilineages, may have been dependent on the practice of polygynous marriage (Martin and Stewart 1982). This dependence is argued in terms of the contribution of such polygynous unions to the demographic stabilization of small band populations.

During the last twenty years researchers such as Adams and Kasakoff (1976) and Romney (1971) have developed a more quantitative and regional approach to marriage choices. They thus developed an alternative strategy which has in a sense turned the traditional anthropological approach to marriage rules and choice of spouse on its head. This traditional approach emphasized exogamy, which meant that the focus was really on marital ties from the point of view of a particular individual or elementary corporate kin unit- *how socially near it was that one could not marry*, and what the choices were for ego. The new approach emphasized endogamy and the outer rather than inner boundaries of marriage choice. By this we mean that it attempted to identify *how socially distant it was that one could marry.* It also moved away from a focus on the normative menu of marriage choices open to *individual egos* towards a quantitative measurement of the frequency of different marriage choices within different sized ranges of *local or regional populations*. This approach was a sort of child of central-place theory and regional analysis. Its focus on marriage links was geared to analyzing group populations within a regional perspective rather than fixating on corporate or other social micro-units. It is thus of considerable interest to archaeologists concerned with regional settlement and population interaction systems.

Using this approach Adams and Kasakoff (1976) first established what they called their 80 per cent group, on the basis of quantitative analysis of marriage data from a range of 21 different cultures. That is the local or regional population of sufficient size to includes 80 per cent of the marriage partners of the marrying group in question. They stated that an additional 10-20 per cent of the population in question marry marriage partners from outside this 80 per cent group, deviating from normal behavioral expectations. Thus the 80 percent group is *that portion of a given society that follows established social rules concerning spouse selection.* The remainder of the population violates these expectations in one way or another. This was seen as a recurrent characteristic of all of the societies that they analyzed, and was put forward as a nearly universal marriage phenomenon.

They were also able to identify social groups on the basis of how restricted/ extensive an area they could practice endogamous marriage in, and how high/ low a rate of endogamous marriage they could achieve within that area. They cited the Round Lake Ojibwa as the most endogamous

group that they could identify anywhere. This group had rates of 50 per cent endogamous marriage *within* a core population group of 50 people, and 80 per cent endogamous marriage within a group of 150 people. This would seem to be a benchmark against which to measure other cases. They also cited the Tiwi, who establish 30 per cent of their marriages within a group of 50, and 80 per cent within a group of 500, as highly endogamous.

At the other end of the scale were societies in which local groups practiced spouse selection over much greater social distances. Adams and Kasakoff note that of the 21 societies they studied, at least two-thirds had 80 per cent groups which encompassed populations ranging from 850 to 10,000 individuals. That meant that the outer limit of spouse selection was confined to groups as large as from 850 to 10,000 people. Adams and Kasakoff also internally ranked each of their study populations in terms of what proportions of the total social group were involved in what percentages of marriages. Thus the Konda Valley Dani had 25 per cent of their marriages contracted within a population as small as 160 people, 67 per cent within a population of 400, 72 per cent within a population of 1,200, and 100 per cent of marriages contracted within a population of 5,000. This approach is complementary to traditional ones, because it offers us data not only on the minimum inside (exogamous) limit for marriage choice but also on the normal outside regional (endogamous) limit for such choice.

This research has also suggested a population density effect on marriage, as well as a constant for distance traveled to recruit spouses. The density effect means that societies with the lowest population densities are the most endogamous in terms of the numerical smallness of their marriage domains. They see these domains as small, in turn, on account of the sparseness of accessible nearby population. Adams and Kasakoff state:

> In societies with large and small endogamous groups people seem to go the same distance for their spouses; 80-100 per cent of spouses are found within a day's journey, that is, 7 miles, and usually the distance is under 4 miles [Adams and Kasakoff 1976:158].

If the above relationship holds true, then the less densely settled populations have a smaller pool of people within a day's walk from which to select a spouse. The authors do note, however, that various desert groups, very sparsely settled, do violate this rule by traveling considerable distances to recruit spouses. They also go on to discuss the special regional patterns of marriage for different groups, patterns based partly on economic and labor power needs of domestic units and corporate kin groups, that provide some variability to the generalizations discussed above.

This hypothesis on the relationship between interaction intensity and distance can be compared to so-called "gravity models" developed by geographers (Olsson 1965; Plog 1976; Johnson 1988a). Such models propose that the amount of interaction between two communities is directly proportional to their populations and inversely proportional to the distance between them (Plog 1976:256).

In his interesting discussion of the application of this type of model to prehistoric populations, Plog provides three caveats. First, terrain-related terrestrial as opposed to "crow fly" distances

must be used with such a model. Second, the presence of intervening communities ("central places") affects the distance-intensity relationship. Third, as Olssen describes it (1966:17), within a certain minimum distance from a community, distance does not cause interaction intensity to vary proportionally. Plog (1976:258) cites a threshhold of about 5 miles [8 km.] for this effect.

This latter effect may in fact help explain Adams and Kasakoff's findings of concentrations of marriage partners formerly resident at under 4 miles distance from each other. Presumably large numbers of individuals from within this threshhold do marry, without a distance related falloff in numbers of couples, while beyond 5 miles or so, the distance relationship does reduce relative numbers.

The traditional and alternative approaches to marriage choice which we have mentioned follow somewhat different concepts in operationalizing endogamy and exogamy. For the traditional approach, if tiny Ojibwa bands of a dozen people are required by marriage rules to marry into other tiny Ojibwa bands they are classified as exogamous. Nevertheless, according to the Adams and Kasakoff schema, the Ojibwa may be highly endogamous in the sense that the majority of their marriages may be confined to a social domain of no larger than 50 people. One system uses kin group in-marriage/out-marriage to define endogamy/ exogamy as either/or nominal scale variables. The other system treats endogamy or exogamy as matters of ordinal scale degree, measured by the population magnitudes involved in networks of endogamous marriage.

The latter approach, focusing on the maximum limits of marriage recruitment domains, has provided several useful analytical tools. The focus on the population magnitudes encompassed by marriage recruitment within a social domain help us to better define the regional reach of marriage systems. In addition, the identification of *different rates of endogamy within different magnitudes of population* help us to relate marriage preference behavior to basic demographic variables such as population density, local availability of spouses, distance between local units, and so on. This is perhaps the most important contribution of this approach. It allows us to focus on the intersection of the purely demographic dynamics of possible spouse choice and reproduction and the social dynamics of ties between different social units in a quantitative way. It is more amenable to a statistical comparison of relative observed rates of exogamy and endogamy to random mate-selection models (Besancencey 1965).

This approach is not always as effective a means to understanding the social logic of individual marriage strategies, however, which Adams and Kasakoff acknowledge. These strategies are conditioned by the nature of social and economic interaction between corporate or other local kin groups. Here more traditional micro approaches are useful, with their focus on the local kin group and strategies of choice by kin group members. It is clear that the tandem use of the two types of analysis that we have described here is more effective than either one alone.

Our own analysis of pre-mission marriage practices has tended to develop from traditional social anthropological models of marriage and corporate group exogamy and endogamy. Our interest in understanding the reciprocal social linkages between what we have identified as corporate patrilineal kin groups has meant that recording and explaining the exogamous marriage links between these kin groups has been treated as analytically very important. Yet our concern to

reconstruct the demographic profiles of individual community kin groups, in various recent research projects we have carried out, has raised interesting questions about the true significance of exogamy.

The problem can be stated in the following terms. If we find, among the Gabrielino or other Takic speakers, that the populations we have classed as corporate patrilineal clans appear to marry exogamously in nearly every case, we may treat our exogamous marriage model as confirmed. If we find, however that our rate of exogamous marriage between such groups is lower, perhaps eighty per cent, we may appeal to the findings of Adams and Kasakoff to the effect that various factors make an eighty per cent rate of exogamy about the highest that may usually be expected. Here the assumption is that our rate reflects real behavior rather than reported behavior, and is the product of a degree of social deviation from preferred practices. If we appear to find an even lower rate of exogamy, well below eighty per cent, then our model of Takic social organization may indeed be called into question.

Yet underlying the issue of marriage rules as social norms is the problem of demographic viability of marriage choices. The size of an exogamous social group is critical in our determining the extent to which the impulse to outmarry is a product of social obligation as opposed to sheer demographic neccessity. The latter condition of neccessity bears down on a population where the number of potential spouses within a group not barred by elementary incest proscriptions becomes too few to support endogamous marriage within that group.

This problem in turn gets us round to the critical importance of establishing in an approximate way how big these corporate patrilineal clan communities really were. As far as the practice of appreciable rates of endogamous marriage is concerned (above twenty per cent, let us say), the difference in available intra-community marriage choices between a community with a population of sixty persons and one of two-hundred persons is quite appreciable. We might, from a purely demographic standpoint, expect higher rates of endogamous marriage in larger communities. It can be observed, for instance, that during periods of native community population decline in different areas of colonial Latin America, community out-marriage often appeared to increase as individual communities themselves shrank in **population (Earle 1992b).**

Our task thus becomes one of determining to what extent marriage choices among the Gabrielino and other Takic-speaking groups deviate from a strict observance of rules of clan exogamy. If such deviation does occur, it is important to determine whether this bears any relationship to the size of the clan community in question. A close analysis of real marriage behavior is in turn important to our confirming whether the general features of the Gifford-Strong model of Takic social organization, with its emphasis on reciprocal marriage and other exchange between clans, does indeed hold up.

5.3.2 Information on Native Marriages from Mission Baptismal and Marriage Records.

The sacramental registers maintained by the Franciscan Fathers at Missions San Juan Capistrano and Mission San Gabriel were reviewed to locate and extract information on marriages involving residents of Puvunga. Both the baptismal and marriage registers were reviewed to identify information on native marriages. While the marriage registers provided the bulk of information on marriage ties, it was also possible, in some cases, to use baptismal information on persons known to be married to identify inter-village marriages. This depended on the true village of birth of female spouses having been properly recorded, which only sometimes occurred.

It is painfully evident that at both Mission San Juan Capistrano and Mission San Gabriel formats for the recording of baptismal, marriage, and burial information varied widely from priest to priest. This variability was increased by the fact that in addition to the two or three missionaries who might have been assigned to one of these missions on a long-term basis, a number of other missionary fathers officiated at the mission on a visiting basis and left entries in the registers. Between September of 1771 and December of 1831, some forty-three different priests officiated at Mission San Gabriel, for instance. It is usually possible to immediately identify an individual priest on the basis of the style of register entry which he made, if he had served at a given mission on a long-term assignment. The different formats used for recording baptismal, marriage, and burial information have had the result of sometimes creating serious problems for the construction of continuous data series. One of the most serious problems was the frequent practice at Mission San Gabriel, particularly before about 1813, of providing names of already baptized next-of-kin of persons being baptized or of baptized persons being married without cross-referencing their baptimal entry numbers.

The record-keeping techniques used to maintain the marriage registers at Mission San Juan Capistrano underwent, in fact, a serious decline during the last decade of the 18th century. At the commencement of the recording of marriages in 1776, recording duties were shared by Fathers Pablo de Mugártegui and Gregorio Antonio de Amúrrio. Initially, marriage partners were listed along with their rancherías of origin. The 41st marriage entry (by Fr. Mugártegui, 5/25/1779) introduced the practice of referencing marriage partners to the numbers of their baptismal register entries, although rancherías of origin continue to be listed as well. On February 20th, 1780, Fr. Vicente Fuster made his first entry in the marriage register, continuing Mugartegui's format. On July 30th of 1780 the last regular entry making direct textual reference to villages or rancherías of origin was made in the marriage registers at San Juan Capistrano. From this point onward, the baptismal entry number and corresponding baptismal entry information must be relied on to identify village of origin. Mugartegui and Fuster maintained the registers during the 1780s.

The baptismal registers during this period continued the practice of identifying for both males *and females*, the village of *residence* of the baptized person's parents. This clearly specified the village of origin of baptized females.

On May 4th, 1789, Father Juan Norberto de Santiago, newly assigned at Mission San Juan Capistrano, made his first marriage register entry. De Santiago shared record-keeping duties with Mugártegui for only a short while. By November of that year De Santiago and Fuster alone were making these entries, with De Santiago subsequently handling the bulk of them. The arrival of

the latter missionary caused the marriage record to become considerably harder to analyze, since he abandoned the practice of listing baptismal entry numbers for people being married. It became neccessary for his entries to be cross-checked using a laboriously constructed neophyte name index. Even more serious was the fact that De Santiago showed little inclination to really identify the villages of birth of native women married into their husbands' rancherías. This is a problem that caused similar difficulties at Mission San Gabriel during this same time period. Thus for females, where entries had formerly specified natal village, e.g., "Navequella, native of 50 years of age, daughter of Guachemal gentile of Quellme", De Santiago now would simply note "I baptized an adult of 63 years of age, called by her gentile name Emeínam, of the ranchería of Unga."

As an example of the difficulties caused by this new approach, we have baptismal entries number 1280 through 1328, made in connection with the bringing into the mission of residents of the rancherías of Pange and Alauna in 1793. De Santiago prepared marriage register entries for 14 married native couples among this group. In baptizing these couples, in every case he gave the village of origin of the female spouse as her husband's village. From our analysis of marriage data for Mission San Juan Capistrano for the 13 year period prior to De Santiago's arrival, we know that over 90 per cent of gentile marriages were exogamous. It appears certain that in this instance, where 14 consecutive endogamous marriages were reported, De Santiago did not collect accurate information. This conclusion is further strengthened by consideration of data collected earlier in 1793 by Father Fuster, information appearing in the marriage register immediately preceding Father De Santiago's suspect entries. The baptismal and marriage information recorded by Father Fuster included 6 gentile marriages. All of these six unions were reported by Fuster as involving the exogamous marriage of spouses born in different rancherías.[72]

In addition, throughout the 1790s, we find that De Santiago invariably listed women as originating at their husbands' villages while Fuster, when he made an entry, invariably specified a distinct village of origin for a female spouse. Unfortunately, De Santiago made most of the baptismal entries during this period.

Throughout the 1790s De Santiago continued to share record-keeping duties with Father Fuster, who in time became more sloppy about his own record-keeping. The unfortunate replacement of Mugartegui by De Santiago as principal sacramental register record-keeper has meant that our knowledge of marriage patterns at Mission San Juan Capistrano has had to emphasize the most trustworthy and reliable information collected between 1776 and 1793.

The difficulties which we have described for the San Juan Capistrano mission marriage data after the arrival of Father De Santiago were similar to problems which existed for similar types of information collected at Mission San Gabriel. First entries in the Register of Marriages at Mission San Gabriel date from the Fall of 1774. At the latter mission during the late 1770s many of the marriage entries for previously married native people remarried by the Church were made by Father Miguel Sanchez. Sanchez was careless in eliciting village of birth for females, once again simply assuming that they had been born at the same villages as their husbands. This error was crucial, since it made it very difficult to determine what the pre-Christian marriage community affiliations of spouses had really been. Unlike at Mission San Juan Capistrano, where

Father Mugartegui's accurate information on this point allowed the true pattern to be seen during the first 15 years of the operation of the mission, the data for San Gabriel for the first several decades of its existence is mostly suspect. It is sadly ironic that the information on newly contracted marriages of mission neophytes was recorded by Father Cruz, who was careful to get more accurate information on the villages of origin of the persons being married. If the division of labor between these two priests had been made the other way around, we would know much more than we do about pre-Christian native marriages at Mission San Gabriel during this period.

Ia addition to the problems of uneven quality of marriage record-keeping, the quality of baptismal records also limited the scope of our marriage analysis. In his study of demography and social organization among the Chumash at Spanish contact, Johnson (1988a) devoted considerable attention to marriage patterns. Johnson was able to identify cases of gentile or pre-Christian divorce, as well as of gentile marriages not renewed at the missions. He was also able to tease out details of gentile residence patterns after marriage. All of this was possible because of the detailed and consistent quality of the baptismal records that he had to work with. These baptismal entries usually not only listed the immediate kin of the person being baptized but also often provided baptismal cross-reference numbers for these kin. Even the entries to be found at Mission San Fernando Rey after its founding in 1798 provided some information on the next of kin, particularly parents, of persons being baptized. The early baptismal entries for Mission San Juan Capistrano, as we have mentioned, ahve also contained some of this information. Unfortunately, many baptismal entries for Mission San Gabriel, during several decades after its founding, do not even indicate what the gentile names of unbaptized parents of people being baptized were.

The analysis of marriage data from the Mission San Gabriel marriage registers encounters a different set of problems from those mentioned in reference to marriage at Mission San Juan Capistrano.

Up through circa 1803 the Mission San Gabriel marriage records do generally provide information on the village of origin or association of at least one of the married spouses in a marital union. At the latter mission during the late 1770s many of the marriage entries for previously married native people remarried by the Church were made by Father Miguel Sanchez. Sanchez was careless in eliciting village of birth for females, once again simply assuming that they had been born at the same villages as their husbands. This error was crucial, since it made it very difficult to determine what the pre-Christian marriage community affiliations of spouses had really been. Unlike at Mission San Juan Capistrano, where Father Mugartegui's accurate information on this point allowed the true pattern to be seen during the first 15 years of the operation of the mission, the data for San Gabriel for the first several decades of its existence is mostly suspect. It is sadly ironic that the information on newly contracted marriages of mission neophytes was recorded by Father Cruz, who was careful to get more accurate information on the villages of origin of the persons being married. If the division of labor between these two priests had been made the other way around, we would know much more than we do about pre-Christian native marriages at Mission San Gabriel during this period.

2) At the moment of the union the individuals involved did hail from the same community but that the bride and groom's kin groups were originally, in pre-mission times, associated with different rancherías. Thus one of the kin groups involved here might have migrated or taken refuge with the other group as a result of the disruptions caused by the Spanish invasion.

3) Uxorolocal marriage occurred within the larger rancherías with sufficient frequency to make inter-clan marriages within the rancherías a significant phenomenon. Uxorolocal marriage involved the in-marrying of a man into his wife's natal community, violating the usual practice in patrilineal societies of women moving to their husband's community to reside after marriage. Such marriages meant that the children of males resident in their wives' communities would be eligible to marry the children of males born in those communities and belonging to the dominant patrilineal clan based there. This would have been the case since, according to the logic of patrilineal descent, the children of in-marrying males would have belonged to a different clan or sib group from the children of males born in the community being in-married into. It is known that such uxorolocal unions did occur among Takic-speakers in southern California.

4) The communities in question may have been large enough to have contained several different *permanently-resident* kin or clan groups that were in a capacity to exogamously marry one another. Such a situation would presumably have been most likely for the largest rancherías and under conditions where either pre-mission era political refugees or in-married males from other communities had established themselves on a long-term basis. A variant of this alternative would locate such dominant and dependent clan groups within a major ranchería's political territory at different settlement locations. The dominant clan or sib would have presumably continued to occupy the major ranchería center.

We would argue, based on the information at hand at this point, that pre-mission gentile marriages were usually clan and community exogamous, and that at least some apparent community endogamous marriages were contracted between members of different clan groups co-residing in the same community. The most likely cause for such a situation would appear to be uxorolocal post-marital residence.

We should also keep in mind the suggestion by Bee and Kasakoff that for various reasons rates of marital exogamy in the worldwide ethnographic record usually do not exceed 80 percent. Variations in post-marital residence are probably significant in establishing this upper limit. During the last forty years, ethnographers have developed a more sophisticated understanding of the cultural ecological and political factors which may cause the variations in post-marital residence in unilineal societies. Circumstances in which either a clan group's resource base fails or armed conflicts undermine a group's political position may lead to dispersal of family groups for varying periods of time.

To completely confirm the above assessment would require a painstaking computer-based analysis of all of the marriage records generated at Mission San Gabriel, supplemented by a major re-analysis of baptismal data. Such a broad-scope cross-check analysis for all marriage records is neccessary to try to pin down the multiple sources of apparent inconsistency in marriage information collection by the missionary priests. The carrying out of such an analysis is

made very difficult without computer assistance given the lack of any consistent cross-indexing of baptism and marriage records until after 1810, despite the fact that this was a standard practice at other missions. An obvious means of cross-checking the true villages of origin of gentile individuals is to review their baptismal entries to determine whether clarifying information may be available there. This might be particularly the case if the male and female partners were not baptized at the same time. However, this approach is made difficult by the late introduction of cross-reference numbers at Mission San Gabriel. These were used by the priests to link individuals being married or buried to their original baptismal entries. This deficiency makes it very difficult and time-consuming to identify the baptismal entries of persons being married.

We also encounter an additional difficulty in analyzing Mission San Gabriel marriage records. At that mission the different forms of Church marriage protocol followed at Mission San Juan Capistrano for gentile as opposed to mission neophyte marriages were not observed. At Mission San Juan Capistrano the standard procedure for authorizing a marriage- the proclamation of the marriage bans on three saint's days, and the examination of witnesses to the effect that the marriage union would not be obstructed by prior marriage or by too close a blood relationship- was waived (*dispensada*) for persons who had already been married in their gentile state. It was apparently felt that such considerations were beside the point, since the Church was reconfirming unions already in effect.

However, at Mission San Gabriel even gentile persons being remarried were given the full treatment, as it were. This fact makes it more difficult to distinguish between gentile and neophyte marriages in cases where the gentile status of the persons involved is not clearly stated.

Ia addition to the problems of uneven quality of marriage record-keeping, the quality of baptismal records also limited the scope of our marriage analysis. In his study of demography and social organization among the Chumash at Spanish contact, Johnson (1988a) devoted considerable attention to marriage patterns. Johnson was able to identify cases of gentile or pre-Christian divorce, as well as of gentile marriages not renewed at the missions. He was also able to tease out details of gentile residence patterns after marriage. All of this was possible because of the detailed and consistent quality of the baptismal records that he had to work with. These baptismal entries usually not only listed the immediate kin of the person being baptized but also often provided baptismal cross-reference numbers for these kin. Even the entries to be found at Mission San Fernando Rey after its founding in 1798 provided some information on the next of kin, particularly parents, of persons being baptized. The early baptismal entries for Mission San Juan Capistrano, as we have mentioned, ahve also contained some of this information. Unfortunately, many baptismal entries for Mission San Gabriel, during several decades after its founding, do not even indicate what the gentile names of unbaptized parents of people being baptized were.

A review of the Mission San Gabriel gentile marriage data as a whole yields an inconsistent pattern of apparent endogamous versus exogamous marriage. During the first twenty years of marriage entries at San Gabriel most gentile marriages are listed as involving persons stated or inferred to be from the same community. After the mid-1790s, there is something of an increase in entries indicating different villages of origin for gentile spouses, but entries indicating the

opposite also continue to be in the majority. In some cases, a particular priest performing marriages for a number of couples from a given community at one point in time may record both types of marriages. In general, after 1790 we find more cases where numbers of married gentile individuals from a given community are remarried within a short lapse of time.

An apparent improvement in the quality of sacramental register record-keeping post-dates the arrival of Father José María de Zalvidea in December of 1806. The change was not immediate. Zalvidea was for several years inconsistent in his provision of reliable village of origin information for gentile spouses. However by 1810 he was recording baptismal and marriage entries with greater care from the standpoint of the true villages of origin of married women. That over time he developed an understanding of the need to inquire carefully about the true village of origin of a female spouse is indicated by the following fact. For specific families whose children he had baptized after December of 1806, he would correct in later baptismal entries information about the mother's village of origin which he had gotten wrong in earlier entries. This provided an important indication that Zalvidea's information on marriages dating from circa 1810 and later reflected better missionary information collection rather than simply changes in the marriage characteristics of the natives being recruited.

6.3.3 Forms of Marriage Reported in Mission Sacramental Registers.

The marriage registers kept by the Franciscan missionary fathers referred, of course, to marriages performed under the strictures of the Church, as defined by the Council of Trent during the Counter-Reformation. These were marriages contracted by neophytes at the mission, after having been baptized and thus received into the church. Nevertheless, these "Christian" marriage records in the registers contain either direct or inferential information about so-called "gentile marriages", contracted before native removal to the mission. The analysis of gentile or pre-Christian marriages is particularly important to the understanding of Gabrielino social organization. It also illuminates the economic and political ties existing between native communities at the time of the Spanish conquest.

The identification of gentile or pre-Christian marriages is sometimes straightforward. Franciscan sacramental records described both monogamous and polygamous unions among as-yet unbaptized native people. This usually occurred in the context of the baptism of their offspring. In many cases native men and women undergoing baptism were immediately remarried to their gentile spouses through a Catholic ceremony. In some cases such couples were actually baptized consecutively and then married. In any case, the presiding missionary might make a comment in his marriage entry that the couple being married had previously been wed in their pre-Christian

state. In other cases, the fact that individuals were baptized together and then immediately married strongly suggests that they had been husband and wife in their gentile state.

A further key consideration in the analysis of marriage entries, however, is the indication of whether marriage banns had been proclaimed prior to the date of the marriage itself or had been waived. If the banns were not dispensed with, the marriage entry would read as follows:

"On the 28th of December 1779, having preceded the three proclamations [(banns)] and the rest required by the Holy Council of Trento I married "in facie eclesis" Fermin Capadernel Indian of this Mission of San Juan Capistrano and native of the ranchería of Uhunga and María Cunegundis Kiinam Indian native of the [ranchería of] Patzeunga, whose baptismal entries are 148 and 208. Witnesses of their freely expressed consent were Pedro Ompsil, Indian of this Mission, Saturnino and Remigio, both [Baja] California Indians...

In cases where previous partners were being remarried in the Church, the proclamation or "publishing" of marriage banns in the community was treated as unneccessary, since the pre-existing gentile union was already recognized by the community. In some cases where the bans were waived, but the persons being married were not specifically identified as having been married in their pre-Christian state, the marriage entry nevertheless spoke of the couple's "freely expressed *renewed* consent" rather than just their freely expressed consent.

Marriage records were not always so carefully kept as the one above would indicate, particularly at Mission San Gabriel. The chief problems at the latter mission were either carelessness in identifying the true village of origin of female spouses, or even greater carelessness in entering marriage information for newly baptized gentile couples.
Entries appear at San Gabriel which state that on such and such a date, the following people married in their gentile state, were married "in facie eclesis":

Juan with Juana
Venancio with Venancia
Rogerio with Rogeria
Gilberto with Gilberta
Tomás with Tomasa

Such entries do not indicate baptismal entry numbers nor villages of origin of the partners. While these may be inferred from a check of the baptismal registers by identifying an approximate date of baptism for the couples in question, the spouses are again invariably treated as having originated at the same community.

A great deal of attention and thought has been given to how the second marriage type, mission neophyte marriages, may be interpreted in relation to aboriginal marriage patterns. The fundamental issue we face is to what extent choice of spouse as made by neophytes followed traditional pre-mission native practices. A certain amount of speculation has appeared in the literature about continuity or discontinuity in marriage practices, reflecting various authors' opinions about the disruption of native social organization represented by mission

transculturation and neophyte living conditions.[73] These points of view involve different emphases being placed on the economic as opposed to ideological/religious aspects or functions of marriage choices. Those who have viewed the choice of spouse and spousal kin group as a chiefly economic matter, have seen the revolution in native subsistence represented by migration of village populations to the missions as largely negating the need for continued strategic intergroup or intercommunity marriage ties (Coombs and Plog 1977).

Alternatively, a focus on Franciscan missionary attempts to remold native culture and ideology has led to arguments that traditional marriage choices and practices were actively prohibited by the missionaries. White (1963), for example, has argued that Luiseño social organization underwent a fundamental shift from village endogamy to village exogamy as a result of a putative ban by the Spanish on cross-cousin marriage, this for religious reasons.

Whites argument seem to us perhaps overdrawn. To be sure, the Franciscan missionaries exercised considerable vigor in prohibiting polygynous native unions. However, outside of this we do not see a great concern over or even, in some cases, understanding of, the traditional systems of choice of spouse. In considering the various Franciscan missions in southern California, it is evident that there was a wide variation from missionary to missionary in the degree to which he understood native kinship conventions or bothered to elicit accurate information about which native communities the marriage partners actually hailed from. This, rather than Franciscan attempts to rewrite the book on marriage choice, constitutes the major analytical obstacle which the researcher has to work through in dealing with mission marriage data for the 1770-1810 period. We note the interesting case of Mission San Gabriel, for example. There, during the late 18th century, resident missionaries had not bothered to get accurate information about rancherías of birth of female spouses- they simply assumed that they were from their husbands' villages. Father Zalvidea, beginning in 1806, corrected this problem, as he was acute enough an observer of native institutions to become aware of the general practice of ranchería out-marriage.

In a similar vein, White's argument that Catholic prohibitions of cousin marriage caused a fundamental change in marriage practices does not hold up. Ironically, the ability of many missionaries to even identify such marriages would have been very limited during the early years of the functioning of the missions. While priests did attempt to determine, following standard Church practice, whether those neophytes requesting marriage were of prohibited degrees of kinship, during the early years this determination consisted in asking native people at the mission whether the couple were closely related, since the priest could not himself know the relationship ties. This doesn't even take into consideration the fact, discussed elsewhere, that cousin marriage was, and continues to be, perfectly common in Latin Catholic countries.

The other argument, to the effect that mission life changed the economic and social significance of marriage, has to be taken more seriously. Certainly the abandonment of native community sites and the integration of native households into the labor force and consumption regime of the missions implied an economic revolution for native families. About how the prior political-ceremonial reunions and other exchanges of clan groups may have continued in an attenuated form at the missions, we still know relatively little. Certainly Harrington's researches

indicate that some such social and ritual activity did continue, but the prior system of inter-clan reciprocities and the contribution of marital exchange to it had been profoundly altered.

Nevertheless, the processes of mission marriage formation appear somewhat different at Missions San Juan Capistrano and San Gabriel. At San Juan the relative numbers of persons baptized from any one ranchería were small during the early years. In addition, the communities offering converts were located relatively close to one another, had traditionally intermarried, and many communities were still functioning social units even after some members had been baptized. One thus encounters a pattern of mission-contracted marriage which appears quite similar to that of pre-mission or gentile native marriages, as far as the factor of community of spouse is concerned. The geographic density or dispersion of marriage ties appears relatively consistent with pre-Spanish patterns.

At Mission San Gabriel, on the other hand, the recruitment of individuals to the mission during the first 15 years or so tended to be dominated by the reduction of a relatively small set of large rancherías- Hutukŋa, Yangna, Sibanga, Juyubit, and Ajuibit, for example. This led to a tendency for young people from these geographically somewhat distant or dispersed large rancherías to be married to one another with a frequency which does not appear to reflect pre-conquest conditions. The choice of spouse was clearly affected by the presence of many members of certain large rancherías at the mission. However, comments scattered throughout Harrington's interview notes make reference to the continued importance in the early 19th century of traditional amities and enmities between communities and coalitions of communities. It seems likely that mission marriages did not cross-cut such traditional relations between rancherías. In addition, as at Mission San Juan Capistrano, during the early decades of missionization many neophyte individuals and families were still linked to rancherías of origin which were still partially inhabited. Thus it is likely that even at San Gabriel traditional social and political alliances continued to exercise some influence on marriage choice.

6.3.4 Marriage Data For Puvuŋa

The study of spouse selection and possible inter-community marriage ties is an important element in the study of native social organization among Takic-speakers at the moment of the Spanish conquest. In our discussion of theoretical issues surrounding Takic social organization, we alluded to the problem of community marital exogamy as a particularly important one. The presumed practice of marital exogamy by residents of individual territorial clan rancherías was suggested by the scholars whom we have discussed above. Our analysis of data from mission sacramental registers at San Gabriel and San Juan Capistrano has aimed to identify pre-mission or gentile marriages, in the first instance, and to determine whether these marriages were community exogamous or not.

Such an analysis faced a series of serious difficulties, given the nature of the recording of marriage data in the San Gabriel mission sacramental registers during the latter decades of the eighteenth century. Given that the great majority of the population of Puvuŋa which was

recruited by the Franciscans ended up at Mission San Gabriel, a consideration of how marriage data were recorded there is important to our analysis.

It has been possible to identify a number of marriage ties involving residents of Puvuŋa established both before and during mission times. For the ranchería, we have identified twenty-six marriages, of which five were remarriages of widowed individuals from Puvuŋa. These marriages are listed in Table 3. Table 2 lists the communities of origin for these unions where they are known.

The analysis of marriage ties of Puvuŋa residents were based on data from the mission sacramental registers at Missions San Gabriel and San Juan Capistrano. The category "gentile marriages" was used for cases where it was explicitly stated that marriage partners had been married in their gentile state. The category "possible gentile marriages" was used for cases where the use of proclamations or marriage banns had been waved and/or other information in the marriage register entry indicated that the couple in question had previously been married. It is to be kept in mind that some of the marriages which are "possibly gentile" may be pre-Christian but post-Spanish invasion. Thus some of the longest-distance unions which may have been gentile marriages, such as that between a Puvuŋa and a Amuscupiabit spouse, may nevertheless reflect altered conditions of settlement and social interaction ushered in by the Spanish conquest.

Table 2: Marriage Ties: Puvuŋa

Gentile Marriages		Mission Marriages			
Puvuŋa- Tibajabit? [Genga?]	1	Puvuŋa- Totabit [Totpavit]	1	Puvuŋa-Hutukŋa [Jutucubit]	3
		Puvuŋa- Chaubit	1	Puvuŋa-Jaisobit	1
Puvuŋa - Jaisobit	1	Puvuŋa- Asucsabit	1	Puvuŋa-Jusicabit	1
Puvuŋa - Tucubit [Jutucubit?]	1	Puvuŋa- Jusicabit	1	Puvuŋa- Sivapet	1
		Puvuŋa- Amuscupiabit	1	Puvuŋa- Ajuibit	1
Puvuŋa - Paiabaipabit	1	Puvuŋa- Yangua?	1	Puvuŋa- Jautbit	1
Puvuŋa - Jaybepet?	1	Puvuŋa- Juyubit	1	Puvuŋa- Yabit	1
Puvuŋa - Puvuŋa?	1			Puvuŋa- Antigua California	1

Gentile Marriages

It has been possible to identify six marriages contracted by residents of Puvuŋa prior to baptism into the Catholic Church.

1) The first, No. 348 in the San Gabriel marriage register (5/17/1789), involved marriage of a male from Puvuŋa , Pacífico Juan, aged 40, and a female, Martina María, variously listed as either from Tibajabit or Genga. The latter was mentioned in the body of the marriage register entry as from Genga, while the index notation made subsequently in the margin listed her as from Tibajabit. The latter place of origin thus seems the more likely, particularly since this person does not appear in the San Juan Capistrano or San Gabriel baptismal registers as of Genga origin. Tibajabit, also listed by Kroeber in the form Tibaha, was placed by the latter in the Rancho Los Cerritos- Lakewood area to the north of Puvuŋa (Kroeber 1925:621, Pl. 57) Genga was located in the Costa Mesa region of Orange County (Earle 1993).

2) San Gabriel marriage register entry No. 761 (3/1?/1803) linked a Puvuŋa female, Damiana, aged 20, and a male from the village of Jaisobit, Damian, aged 24. Jaisobit was located in the Rancho Los Coyotes area, which lay approximately 6-8 miles [10-13 km.] to the northeast of Puvuŋa.

3) In San Juan Capistrano baptismal register entries No. 651 and 654 (3/29/1785) a pre-mission marriage was also referred to linking Puvuŋa and a ranchería called "Tucubit". A 24 year old woman named Mathia Anna Sinomgueraram was listed as married to a gentile named Cenaunpugimovit, of unknown age, of Puvuŋa. This name appears at least once elsewhere in the San Juan Capistrano baptismal register. It appears to be a variant of the name of the ranchería of Jutucubit or Hutukŋa in the Santa Ana Canyon area.

4) Our next case illustrates the problems posed by inconsistencies in record-keeping between priests and between sacramental registers. Mission San Gabriel marriage register entry No. 764 (3/6/1803) lists a marriage between "Blas Antonio de Pububit and Veronica, married previously as gentiles." In the left margin of the register page a note states "Blas Antonio with Veronica of Pububit." However, a Mission San Gabriel baptismal entry for Blas Antonio, No. 2869, dated 10/10/1797, lists his community of origin as "Paiabaipabit." His burial register entry, No. 4114 (1/20/1819), lists him as native of the Ranchería of Pububit, widow of Veronica, and baptized at entry No. 2869. Paiabaipabit or Payabaipabit is a ranchería mentioned several times in the San Gabriel baptismal register. Its location is unknown. The various register entries suggest that Blas Antonio had in-married into Pububit or Puvuŋa from his natal community.

5) An additional interesting case is that of the reported marriage of a woman named María Cecilia to "...the chief of said ranchería..." of Púuvit or Puvuvit. This variant spelling of the ranchería also appears elsewhere within a single baptismal entry as Púbit and Pububit (Mission San Gabriel baptismal registers, entry No. 2379 (9/1793)). María Cecilia, aged 60, is baptized on

November 21st of 1800 at the ranchería by a visiting priest. This was done because the woman was considered to be in great peril of dying. It was reported in the same entry that soon afterward the woman died.

A corresponding burial register entry for November 23rd, 1800, No. 1851, lists the deceased woman, however, as "...from Jaybepet or Púubit...". Jaybepet corresponds to Jaibepet and Jaibenga, a ranchería which yielded at least seventy-four converts to Mission San Gabriel. This ranchería has not been located. Harrington inquired about this placename and was told that a term equivalent to Jaibit meant "the sierra that cuts across" and that Jaibipet referred to mountains located off to the west of the San Bernardino Valley somewhere near San Gabriel (Harrington 1986: Reel 103: Fr.20-21, 51-52). Given the early dates at which this community begins to be recruited (mid-1770s), it is possible that it may be located somewhere in the vicinity of the Fullerton or Puente Hills. The burial register suggests that the woman in question may have originated from Jaibepet.

The above entry concerning the baptism of Maria Cecilia contains the only reference we have encountered in the mission sacramental registers to chiefs and chiefly leadership at Puvuŋa. This really constitutes a terrible breakdown in record-keeping, as most other mission register sources in California and southern California, and even the San Gabriel register in later years, kept much better track of native political leaders and their families. One aspect of the information we do have here is the fact that the chief had not been baptized as late as 1800. In fact, we do not have definitive information that the chief was ever baptized, although one of several elderly individuals from Puvuŋa baptized after 1800 may have in fact have been this chief.

6) In the case of an additional marriage listed in the Mission San Gabriel marriage registers (entry No. 830 (2/10/1804)), the marriage partners, just baptized, are listed as from the same ranchería, both in the body and margin of the entry. The entry figures in a block of fourteen such entries made for gentile couples baptized and married by the same priest on the same day. The Puvuŋa marriage and four others (entry Nos. 827-831) list couples both in the body of the entry and in the margin as of the same village of origin. However, the entry following these five, of the same date, lists the marriage partners as of the same village in the text of the entry, but not in the margin. A final eight entries of this block list gentile partners as of different villages of origin both in the text and margin of the entries. It appears here then that the officiating priest may have begun the baptisms and marriage assuming that husbands and wives were of the same community, and that part way through the proceedings he corrected himself by inquiring more carefully about places of origin.

A consideration of the six confirmed gentile marriages recorded for Puvuŋa suggests the existence of marriage ties with Hutukŋa on the lower Santa Ana River, and with Tibajabit and Jaisobit, to the north and east of Puvuŋa. The sample of marriages represented here is so small that it is difficult to really draw any negative inferences from the data, as far as spatial distributions of marriage ties are concerned. Nevertheless, we do seem to have evidence for the general practice of preferred marriage between different rancherías. We can also cite in this

connection a case of what appears to be uxorolocal residence after marriage, where the male spouse has ended up residing in his wife's natal village.

Mission Marriages

These marriage links include five ties with villages on the Santa Ana River (Hutukŋa, and Totabit), as well as a number of Gabrielino villages in Los Angeles County. The rancherías in question were located as follows:

1) Ajuibit: This community also appears in the form Ahuinga or Awinga. It has been located near La Puente, to the northeast of Puvuŋa. This community was brought into Mission San Gabriel soon after the latter's founding and yielded almost 200 baptisms, so it was a major provider of marriage-eligible young people in the early decades of mission life.

2) Amuscupuabit: the was a Serrano ranchería located near Cajon Junction in Cajon Pass, northwest of San Bernardino. This marriage linkage would appear to be very much a product of mission conditions.

3) Asucsabit: Near the mouth of Azusa Canyon in the San Gabriel foothills was located the important ranchería of Asucsabit. This large community provided over 200 baptisms, and was also recruited beginning soon after the founding of Mission San Gabriel. It also was a major provider of neophyte spouse candidates.

4) Chaubit: The rancheria of Chaubit or Chowenga (Chaunga) was placed by Harrington consultants in the Palos Verdes- San Pedro vicinity (Harrington 1986: Reel 103: Fr.054).

5) Hutukŋa (Jutucubit): This was a very large Gabrielino ranchería located near the Yorba ranch headquarters on the Santa Ana River. As we have already mentioned, it was also recruited very early, and was an active early element in mission marriages.

6) Jaisobit: This place was said to be located on the San Gabriel side of La Puente; the name refers to a low hill (Harrington 1986: Reel 103: fr. 49).

7) Jautbit: This community was placed by Johnston (1962: 71) at El Monte. Its alternate form, Jautnga, appears to correspond to Reid's "Houtg-na" (Reid 1926).

8) Jusicabit: The site of this ranchería has not yet been been located. It would most likely have been located in southernmost Los Angeles County.

9) Juyubit: Corresponds to Juiubit or Juyunga. Harrington mentions Xuju`vit ("Huyu`vit") as near and downshore from San Pedro, and indicates that it was a politically powerful ranchería (Harrington 1986: Reel 103: Fr.017). Some 347 baptisms for this rancheria appear in the San Gabriel registers, and it is considered to be a Gabrielino community. It correspondsto Xujunga (Xujubit) , near San Pedro Bay. This place was also recruited beginning in 1775, and became an important provider of spouses at San Gabriel. It was said to be a center of political influence in

the San Pedro- Long Beach coastal region. Its early recruitment and large size raises intriguing questions about the structure of political power in the region and about the process of recruitment of communities to the San Gabriel mission.

10) Sivapet: This ranchería was located adjacent to the second site of the San Gabriel Mission. It was also, logically enough, recruited early on, and contributed over 200 baptisms. It was a major player in mission matrimonies.

11) Totabit (Totpabit): The ranchería of Totabit was located on the lower Santa Ana River drainage between Pajbenga, near Santa Ana, and Hutukŋa, near the mouth of Santa Ana Canyon. It may possibly have been visited by the Portolá expedition. It was intermarried with both Gabrielino and Juaneño-speaking communities.

12) Yabit: This ranchería, in the form "Yang-na", was associated by Reid with the Pueblo of Los Angeles (Dakin 1939: 220) (Harrington 1986: Reel 103: Fr. 20). Yangua may be associated with Yangna. Yabit, despite its distance from San Gabriel, was being recruited by the end of the 1770s, and provided over 160 baptisms. It also figures importantly in mission marriages after the end of the 1770s.

We have listed below both gentile and mmission or neophyte marriages involving persons of Puvuŋa origin. In addition to the data categories listed in the table, we have also indicated under the column for sex of the person of Puvuŋa origin whther the marriage was gentile (G-G), involved marriage of single neophytes (S-S), or single neophytes marrying neophyte widowers (S-V, V-S). Also indicated are neophyte marriages of persons previously widowed (V-V). Question marks indicate missing data.

Table 3: Identified Puvuŋa Marriages.

	Person of Puvuŋa Origin			Spouse			
Marriage Entry No./ Date	Sex	Baptism No.	Name	Sex	Baptism No.	Name	Village
MISSION SAN GABRIEL							
255 1783	F S-S	1138	Cathalina Josepha	M	?	Wenceslao	Jaisobit
330 1789	F S-V	1589	Ciriaca Antonia	M	?	Enrrique Maria	Hutukŋa
348	M	1715	Pacifico Juan	F	?	Martina María	Tibajabit?/

1789	G-G						Genga?
349	M	1174	Leonisio Joseph	F	?	Mariana	Totabit
1789	S-S-						
365	F	1666	Aurelia Josepha	M	?	Odorico Joseph	Juyubit
1790	S-S						
474	F	2336	María del Pilar	M	?	Buenabentura Cucuis[?]	Guibabit
1793	?-?						
?	F	2336	María del PilarM	?	?	Constantino Ynguina[?]	Yangua?
477	F	2140	Juliana	M	?	Ambrosio	Hutukŋa
1793	S-V						
496	M	1992	Pedro Nolasco	F	?	Maria Concepción	Hutukŋa
1793	S-V						
511	M	1675	Roman Miguel	F	(na)	Cecilia María	Antigua Calif.
1794	S-S						
521	F	1999	Marcelina Juana	M	?	Rafael	Chaubit
1794	S-S-						
623-	M	2087	Eliseo Gabriel	F	?	Florencia Anna	Asucsabit
1798	S-S						
636	M	1675	Roman Miguel	F	?	Josepha Calasan[i?]	Yabit
1798	V-S						
682	M	1715	Pacifico Juan	F	3373	Gabriela Josefa	Hutukŋa
1801	V-V						
720	F	1999	Marcelina Juana	M	?	Raymundo	Jaisobit
[Second marriage]							
1801	V-S						
755	F	2081	Macrina	M	?	Efren *Payocus*	Jusicabit
1803	V-S-						
761	F	3456	Damiana	M	3452	Damian	Jaisobit
1803	G-G						

764 1803	F G-G	3458	Veronica	M	?	Blas Antonio	Paiabaipabit
830 1804	M G-G	3646	Enodio *Sanauagua*	F	3647	Enodia *Alagul*	Puvuŋa?
1068 1809	M S-S-	3058	Lorenzo de Santa Clara	F	4054	Rustica	Amutscup-iabit
1680 [Second Marriage] 1824	M V-V?	3058	Lorenzo de Santa Clara	F	4533	Nicolasa	Sivapet
1704 [Second Marriage] 1824	M V-V	1978	Ambrosio Miguel	F	2149	Claudina	Ajuibit
?	M	[Capitán of Puvuŋa]		F	3180	Maria Cecilia	Yangna?
?	F	3647	Enodia *Alagul*	M	3943	Fermín *Michuis*	Jautbit
[Second marriage]							
?	M	[2188]	Gerardo Francisco	F	[2188]	Leonisia Maria	Hutukŋa

MISSION SAN JUAN CAPISTRANO

?	M G-G?	(NA)	*Cenaunpugimovit*	F	650	Mathia Anna *Sinongueraram*	Jucuvit

Marriage at Puvuŋa

The data we have presented on both pre-mission and mission (neophyte) marriages bring out several important points bearing on population, marriage, and social organization in the region. First of all, we note the different geographic characteristics of recruitment of spouses in gentile and mission neophyte marriages. Our small sample suggests that neophyte marriages recruited spouses from a much wider geographical range of communities of origin than did the gentile marriages. This can presumably be attributed to the presence of potential spouses from a wide range of communities represented at Mission San Gabriel. What is interesting about this is the

fact that several of the communities which were recruited to Mission San Gabriel early and provided large numbers of converts appear to have been regionally powerful in pre-mission times. This would have been the case with the communities of Juyubit and Jutucubit (Hutukna), both of which were linked to Puvuŋa by mission marriages. (The latter appears to have been linked to Puvuŋa through gentile ties as well). The regional importance of these two centers may have impinged upon Puvuŋa in pre-mission times as well, given the suggested influence of Juyubit in the Long Beach area, and that of Jutucubit in the lower Santa Ana River drainage region.

The communities of origin of the gentile marriages were situated either in the coastal plain of southern Los Angeles County or in the lower Santa Ana River drainage in northern Orange County. As we have suggested elsewhere, the lower Santa Ana River region appears to have constituted a transitional zone between the Gabrielino-occupied southern Los Angeles County region and the Juaneño communities of central Orange County.

Neither the gentile nor the neophyte marriages suggest a strict adherence to a cultural norm of moiety-regulated marriage, nor of exclusive ties between single sets of reciprocating rancherías. We have suggested elsewhere (Earle 1993) that marriage and other forms of ceremonially-related reciprocation among the Juaneño and Luiseño were not regulated by the operation of a moiety system. Analysis of marriage data for Gabrielino and Juaneño communities located in Orange County and recruited to Mission San Juan Capistrano certainly indicates that the web of marriage ties in that area linked numbers of nearby rancherías together in a way inconsistent with a moiety system. With the latter kind of social scheme, each community is restricted in its marriage choices to a limited set of possible partner communities. If Community A and Community B each exchange marriage partners with Community C, by the logic of the moiety division they cannot exchange partners with since this would violate the rule of moiety exogamy. Yet this appears to occur between coastal communities in Orange County.

It seems quite likely, however, that the observance of at least a nominal prohibition on endogamous marriage ties within the community was observed As noted above, the great majority of the gentile and neophyte marriages recorded for Puvuŋa were clearly community exogamous. We have also outlined the evidence indicating that the two cases recorded where both members of a couple married in their gentile state were claimed to have originated at Puvuŋa involved errors in data collection. We have elsewhere discussed this issue and the data interpretation difficulties involved.

The functioning of corporate patrilineal territorial clans within a system of regionally organized reciprocity wherein moiety divisions do not appear to regulate such reciprocity is consistent with Strong's conception of the two institutions as historically distinct. It is possible that such a moiety system may have fallen victim on the coast to increases in regional population density which made the continued structuring of inter-community exchange "by halves", as it were, increasingly difficult. This, of course, assumes that such a system once functioned among the Gabrielino and Juaneño, as Gifford had speculated.

Further intensive work with the Mission San Gabriel marriage registers should help to clarify various of the issues raised in our discussions of traditional native marriage practices and neophyte patterns of marriage exchange. Of particular interest is the problem of the extent to which choice of spouse in the mission context continued to reflect traditional reciprocal relationships. In addition, further regional research should also help clarify whether there frequently occurred semi-exclusive relations of marital and other exchange between specific territorial clans in pre-mission times.

Puvuŋa-Related Families at the Missions and Their Descendants

One of the possibilities opened up by the development of mission sacramental register research has been the application of family reconstitution methods to carry out genealogical reconstruction. This reconstruction shows lines of descent of native families and individuals.

In the case of Mission San Gabriel, the fact that baptismal, marriage, and burial records were not cross-indexed until after the beginning of the nineteenth century meant that it was neccessary to carry out painstaking searches to identify mission-born offspring of persons born at Puvuŋa. These searches have had to depend on the identification of the given Christian names of neophytes from Puvuŋa as the indicator of their connection to children reported as baptized at the San Gabriel Mission. However, the number of infants identified as associated with male or female parents born at Puvuŋa once cross-reference numbers became more widely used at Mission San Gabriel early in the second decade of the nineteenth century was still small. This was the case because sacramental register cross-reference identification numbers were not assigned retroactively. This meant that male or female parents baptized from Puvuŋa before the second decade of the nineteenth century were not so referenced in the baptismal entries of their offspring.

Of the fifty individuals associated with Puvuŋa as listed in our San Gabriel sacramental register records (Table 2) some thirteen members of Puvuŋa-associated families were born in 1790 or later. This total included nine persons born of Puvuŋa families, and four spouses of persons born of Puvuŋa families.

The identification of descendants of families associated with Puvuŋa in census and ranch records of the 1850s and 1860s has focused on native families working at Rancho Los Alamitos, an Hispanic land grant estate associated with the site of Puvuŋa. The most important sources of information on these families are the censuses of Los Angeles County carried out in 1850 and 1860 (Newmark and Newmark 1929; United States....1860). In addition, ranch employee paybooks for rancho Los Alamitos have also been available for consultation as part of the Abel Stearns Manuscript Collection at the Huntington Library. These provided information on the names of workers resident on the estate in the 1850s and 1860s (Stearns n.d.).

In attempting to correlate the Rancho Los Alamitos information from mid-century with earlier mission sacramental register data, we must first review the census data, which provides

information on approximate ages of individuals. Use of this material is hampered by the tendency for census-takers to collect first names only from some of the native household heads which they enumerated. In addition, the mission register records for Mission San Gabriel, as we have seen, are also sometimes quite vague in specifying surnames Because of these problems it is important that the approximate ages of individuals one may want to match to mission records be known.

The numbers of adult native individuals who can be clearly associated with Rancho Los Alamitos as residents in the 1850 and 1860 censuses is not large- some 15 persons of both sexes over age 15 in 1850. In addition, none are listed in 1850 as over age 40, for what this may be worth. This fact is rather interesting, since it indicates that the native families or more properly the native households listed in the 1850 and 1860 censuses did not include older people or the elderly. This as well as the names in the paybooks for the Rancho indicate that native people were also living in locations removed from the Rancho itself. Various names appear in the paybooks which were not of workers resident on the Rancho.

Our attempts to link persons mentioned in the sacramental registers with residents of the Rancho were unsuccessful. This is perhaps not too surprising given that our identified register births and baptisms from Puvuŋa generally date from well before 1820, while the maximum age of the later native residents of the Rancho was only forty. The relatively small number of individuals baptized from Puvuŋa also made the process of finding a linkage more difficult.

7. Community Population and Regional Settlement Systems

We have presented below some additional raw baptismal data on contact-era rancherías in Los Angeles and Orange Counties. The total numbers of reported baptisms are in some cases approximate, on account of doubts concerning the association of some variant ranchería names in the registers with known places. This is particularly true with the Gabrielino communities listed herein.

The data presented below help us discuss a fundamental problem in the interpretation of any sacramental register data for southern California native communities. This problem is the fact that in some cases the numbers of reported baptisms for a given community do not appear to be plausible as indicators of total population. Both what we know about the sizes of other communities in the region and internal evidence from age-sex analysis may indicate in a given case that baptismal numbers were not reflective of true population magnitudes. Now this phenomenon can be usefully viewed from a regional standpoint, since we find some communities where this discrepancy appears to be a major problem and others where it does not. Thus a comparison of data from a range of communities helps us get a better grasp of the problem.

This issue, I would reiterate, is absolutely central to our analysis of population at Puvuŋa. The numbers of baptisms reported for Puvuŋa appear, as we have discussed, too low relative to what the contact-era population may have been. In the following section we will provide a regional

view of this problem of the relationship of reported community baptisms to community population magnitudes at the time of the Spanish conquest of California..

Table 3: Population and Baptismal Data For Selected Rancherías, Los Angeles and Orange Counties

Community	Location	Reconstructed Populations	Bap-tisms	% Juvenile Baptisms	Date(s) of: Initial 10 Baptisms	Last Baptism
Area 1 - Central Los Angeles County						
Ajuibit (Ajuibit)	[La Puente]		188	72	1774	1802
Sivapet	[San Gabriel Mission]		218	77	1774	1811
Jautbit	[El Monte]		102	56	1786-90	1816
Asucsabit	[Azuza Canyon]		228	59	1777, 1781	1811
Toibiŋa	[Ro. San Jose- Pomona]		72	63	1785-88	1813
Cucamobit	[Cucamonga]		102	66	1786-87	1813
Area 2- Southern Los Angeles County						
Pomojuich	[Brea Canyon?]		65	88	1772	1774
Jaisobit	[Ro. Los Coyotes]		98	54	1780-84	1807
Puvunga (Puvubit)			36	47	1785-91	1798
Suanga	[Long Beach]		15	53	1791-1811	1813
Juyubit	[San Pedro]		347	63	1775	1804
Chowenga (Chaubit)	[San Pedro]		39	49	1785-87	1813
Yabit (Yangna)	[Los Angeles]		166	57	1777-79	1805
Area 3 - Santa Ana River Drainage						
Pamaibit	[Sta. Ana Mts.]		173+	63	1797-1809	1819
Paxauxa	[Temescal Creek]		9			1816?
Anonga	[near Corona]		25		1787, 1796-802	1818
Hutukŋa	[Lower Sta. Ana River]		242	59	1771-75	1816
Totpabit	[Lower Sta. Ana River]		46	54+	1782-84	1819
Pajbeŋa	[Lower Sta. Ana River]		33		1776,1784	1807
Genga	[Lower Sta. Ana River]	**100-120**	64	40	1784	1811
Lukupŋa	[Lower Sta. Ana R. ?/ El Toro?]	**45**	23	37	1778-85	1803
Area 4 - Trabuco- San Juan Creek Region						
Alume (Alauna)	[El Trabuco]		65		1777-83	1787
Huumai	[Cañada Gobernadora]		42		1777-78	1805
Sajavit	[San Juan Creek]		48	17	1777	1805,-17
Putiidum	[San Juan Capistrano]	**122**	57	45	1778	1797
Acaptivit (Axatchme)	[San Juan Capistrano]	**36**	18		1777-78	1787
Tobna (Toovanha)	[Serra]	**45-64**	26	37	1777-78	1795

Area 5- San Mateo- San Onofre- Las Flores Creek Drainages

Tobe	[Cristianitos Canyon]		24		1784-90	1806
Souche	[Cristianitos Canyon]		9		1778-	1788
Pange	[San Mateo Creek]	**256**	129	21	1777-78	1794-98
Hechmai (Kecchenga)	[San Onofre Creek]		11		1779-?	1797
Uxme	[Las Flores Creek]		22		1779-82	1797
Mocuache (Muka'shish)	[Las Flores Cr.]		26		1779-85	1797
Chakapa	[Las Flores Creek]		7		1779-	1804

This list includes all but three mainland rancherías listed at San Gabriel Mission (Tochajana, Tobpet, and Uchubit) with over 100 recorded baptisms. The list is, of course, by no means exhaustive, nor can it be considered entirely definitive as an identification of the exact numbers of all ranchería baptisms. It is intended merely to give us an idea as to what the data suggest about relative village sizes for different rancherías associated with Missions San Juan Capistrano and San Gabriel. One must keep clearly in mind that the figures given are for baptisms and not for population. Baptisms represent only a portion of total population, and as we have seen, determination of the relationship between numbers of baptisms and size of total population has to be worked out on a case by case basis. We know that different communities experienced varying rates and types of baptismal recruitment. The list also contains figures for several communities for reconstructed populations, as discussed in Earle (1993).

The figures given above also represent baptisms "over time", so to speak, rather than indicating those baptized and alive at a given moment in time. The rightmost column above, marked "Date(s) of Initial 10 Baptisms", indicates the time span over which the first 10 neophytes from each village were baptized. It is apparent that for most communities this process took a long time. Obviously, the longer the time span involved in recruiting neophytes, the more that the totals of baptisms for a community would have diverged from the size of its baptized population at the end of the recruitment process.

For the period before 1810, the only communities reduced to Mission San Juan Capistrano which were baptized more than a very few people at one time were Alume (1793) and Pange (1793). In the case of Mission San Gabriel, the only rancherías before 1811 for which groups even as large as twenty to thirty people were baptized as a group were Pomojuich (1772), Ajuinga (1775), Yabit (1781), Juiubit (1781), and Hutukŋa (1784). In 1811, several others were reduced in large groups, including Paimabit in the Santa Ana Mountains, as part of the wave of reductions carried out in southern California that year.

The column labelled "Percentage Juvenile Baptisms" in the table above illustrates different patterns of baptismal recruitment in different rancherías at different periods of time. It indicates, for all baptism associated with a given village, the percentage of persons who were under age 14

at the time that they were baptized. This figure is not the same as the percentage of a total population under a given age at a given point in time, since the baptisms were usually carried out over a span of a number of years, while the population proportion ratios we have used are for a single "freeze frame" point in time.

The juvenile baptism percentages do indicate whether in a given community it was adults or children who were more likely to undergo baptism. Some communities recruited by Mission San Gabriel in the 1770s show high rates of juvenile baptism. Baptisms for Pomojuich (Pomoquin?) for example, were almost 85 percent juvenile. Since this community was recruited early (1772-1773), there was still a vigorous juvenile population available to baptize. Interestingly enough, the parents of these children seem to disappear without a trace from the baptismal registers as far as the reckoning of their villages of origin is concerned. Nearly the whole adult population of this community never enters the baptismal record-keeping system, although it may physically have moved to Mission San Gabriel. The under-representation of adults in the baptismal count for this community was so great that its true population could have numbered 200-230. This illustrates the hazards of taking raw baptismal counts as prima facie indicators of village size.

The ratio of young people being baptized may be an indicator for specific communities that older inhabitants tended to refuse baptism or other participation in the mission system. This can be a clue to determining how large the "missing adult" component may be, at specific points in time, for particular communities. The greater the extent to which all baptisms for a given community were carried out in a relatively brief span of years, as was the case with Pomojuich, the more clearly does this ratio indicate missing adults.

This juvenile to adult baptismal ratio sometimes may also indicate a very different scenario, represented by the Juaneño community of Pange. The latter ranchería has a percentage of under age 14 baptisms of only 21 percent. A substantial proportion of Pange's baptized population was reduced at a later date than Pomojuich's, that is to say, the early 1790s, and in a short span of time. It appears that by this date, mortality effects caused by the new colonial circumstances were beginning to erode the juvenile population at Pange, resulting in the serious under-representation of this segment of the population in the Pange baptisms.

The factors we have discussed here help make more plausible the marked variation in magnitudes of baptismal totals for different communities which we note in the table. A few rancherías appear to have disproportionately large populations. Examples in the Southern Los Angeles County- Northern Orange County marriage network region include the cases of Juyubit (347), Hutukŋa (242), Pamaibit (173+), and Pange (129). However, the fact that various other communities baptized at Mission San Gabriel had high ratios of juvenile to adult neophytes suggests that their pre-Spanish era populations may have been considerably larger than the above baptismal figures indicate.

7.1 Regional Population Totals and Population Density

We would like to conclude this section by providing some tentative comments on contact-era population and population density. We will discuss several alternative approaches to calculating ranchería populations. In this discussion we will, by way of illustration, contrast lower-density Gabrielino settlement areas in southern Los Angeles and northern Orange Counties with higher density Juaneño settlement areas in southern Orange County.

For our first estimate, based ultimately on baptismal information, we can use two types of population inference. First, our population reconstruction data from sample communities, using age-sex structure analysis and family reconstitution data. Secondly, for communities for which the reconstruction data is not yet available, information on total numbers of baptisms. By way of illustration, we will discuss a recent application of this method. It was recently applied to a group of 28 fully or partially Juaneño communities (Earle 1993). For four communities mentioned by Boscana for which baptismal totals were not available, we have estimated 20 baptisms per community. On this basis we have calculated a total population of 1658 persons, using a population to baptism ratio rounded off from 1.99:1 to 2:1. This yields an average population of 62.5 persons per community. This total we will call our Estimate A.

A second approach ranks community sizes according to the relative ranking of rancherías according to our baptismal data. The largest communities- such as the Juaneño communities of Alauna and Pange were assigned population totals of 150 persons each. The next smaller rank of communities- Huumai or Uxme, for instance- were given a population of 100 persons per ranchería. A remaining category of smaller communities was given a population of 70 persons each. When this approach was applied to Juaneño communities reduced to Mission San Juan, it yielded a total of 2425 persons, and an average community size of 91.50. This represents our Estimate B. (Earle 1993)

A comparison of these two estimates points out the discrepancy between the average community population levels suggested by the bulk of our baptismal data and those indicated by baptismal and other information more firmly indicative of community population at one point in time. We have discussed the fact that the later in time communities were recruited, and the greater the time span over which the recruitment took place, the higher the likelihood of serious underrepresentation of contact-era population. Conversely, the greater is the extent to which community populations were reduced and baptized within a short span of time, the larger their baptized populations appear.

As we have mentioned previously, this phenomenon appears evident in the Juaneño baptismal data. Those two communities which were recruited to Mission San Juan Capistrano in the greatest numbers within a given year, Pange and Alauna, also exhibit among the largest totals of baptisms of any Juaneño communities. There appears to be a connection between the bringing in of large numbers of residents of these rancherías to the mission at one time and the greater representativeness of the baptismal information.

In addition, we have evidence for various interior Takic-speaking communities visited by expeditions of exploration that even there, on the desert margin, clan ranchería populations in

the 50-100 person range or even higher were encountered after the Spanish conquest (Earle 1990, 1992a). Harvey (1974:4-6) also reviews village population indicators for the Luiseño. He cites coastal Luiseño population information from the Portolá Expedition, deriving what he calls a conservative average of 78 people reported in each of 6 communities visited. Five of these communities fell within the 60-160 population range. Here again the caveats concerning underreporting by this and other expeditions of exploration need to be kept in mind. Thus a consideration of the likely range of community sizes at contact makes the 65-150 population range more acceptable than a 10-65 community population range. The latter is the range for all but one of our Juaneño rancherías as indicated by the raw baptismal data.

The Estimate A we developed reflected a population range (20-130 people) intermediate between the raw baptismal data and our Estimate B range of 65-150. However, lower end values of this intermediate range, based on a 2:1 ratio to raw baptismal totals, still seem too low. Territorial clan units with populations of 25 people do not seem feasible given what we know about social organization among the Juaneño, Luiseño, and Gabrielino.

Even our Estimate B, however, used smaller average ranchería sizes than those employed in other estimates. White (1963), for instance, used an average community size of 200 in his population and population density calculations for the Luiseño. Harvey also cites Kroeber's population estimate for the Luiseño as a whole yielding a per village average population of 200 people (Harvey 1974:4).

How are we to make sense of all of this? Any definitive resolution of these issues must involve considerable further research. However, we have reached the tentative conclusion that some approximate notion of at least *mission-era* population can be gained by doubling raw baptismal counts for individual communities, in cases where the baptismal process was not too fragmented. In other words, there is considerable apparent variation in the usefulness of raw baptismal counts, depending on the history of baptismal recruitment.

However, this having been said, we are left pondering the possible difference between what seem to be reliable early mission-era community population minima as expressed in Estimate B, and what may have been larger coastal populations at contact. These might represent the difference between a 65-150 average range and a 100-200 average range. Such a difference could be accounted for by further disease and migration-related population dislocation early in mission times, and even possibly the impact of early epidemic disease outbreaks. In other words, we can feel quite confident that both expedition account information and baptismal counts represent underreporting of community populations, but estimating the exact magnitude of this is beyond our current knowledge.

The level of community population on the coast represented by our Estimate B has been contrasted by Harvey (1974:6) with what he sees as higher average populations in interior Luiseño territory. He placed the average population for these interior communities at 250 people at the time of the Spanish conquest. Here again the issue of the demographic impact of the early missionization and settlement of the coast arises.

The notion that interior communities were larger than coastal ones seems to be based on evidence of differential community population survival connected to the history of the Spanish conquest. When we review the information on baptismal totals for the Gabrielino and Juaneño presented above, it is clear that communities on the water's edge did not usually produce the largest numbers of baptisms. Rather, various of the larger Juaneño and Gabrielino rancherías (those yielding over 150 baptisms) were located both on the coastal ends and along more interior portions of major drainages. The distance of the more interior of these communities to the sea generally did not exceed 25 miles [40 km.]. In the cases of the rancherías of Hutukŋa and Paimabit, linked to the lower Santa Ana River drainage corridor, the distance to the coast falls within this 20-25 mile range. We will further discuss the issue of regional settlement systems in a later section.

The meaning of the term interior when used in references to the interior Luiseño by various authors can be confusing. Some treat the rancherías around Mission San Luís Rey as interior because they are not located on the ocean, while others reserve the term for communities located much further inland. It is useful to clarify here several different ways in which "coastal communities" have been referred to. In discussing the population characteristics of settlements in coastal versus interior southern California, this report treats the 25 mile [40 km.] wide coastal littoral zone referred to above as part of the coastal region. In other contexts where the discussion is more focused on micro-geography, however, a distinction is made between rancherías whose clan territories abut on the coastal or estuary zone, and others located further inland. Nevertheless, in a general social, cultural, and demographic sense, coastal peoples included all communities located within the coastal littoral zone, which usually encompassed at least the 25 mile wide region we have referred to.

7.2 Patterns of Settlement and Territoriality

We have discussed in a previous section the issue of the relationship between settlement organization and the nature of localized territorial clans. Among the various Takic-speaking groups in southern California, clan territories have been found in some cases to encompass more than a single ranchería. While the Franciscan mission records have tended to create the impression that the social landscape was made up of a series of "ranchería territories" composed simply of villages named in the mission records and their immediate surrounding territories, other ethnographic information has suggested otherwise. We can be confident that, in the case of the region under discussion here, there existed subsidiary settlements included within the clan territories of major named rancherías. The most important indication of this is the fact that named temporary or permanent habitation sites are mentioned in ethnographic accounts which do not figure in Franciscan mission sacramental records.

In evaluating the evidence the problem of contemporaneity arises, however. Were the possible "subsidiary sites" occupied at the time of Spanish exploration, or were they lived in only at an earlier or later date? We have referred to this problem in our discussion of named village sites in northern Orange County which do not appear in the sacramental registers of Missions San

Gabriel or San Juan Capistrano. It is difficult for us to know for certain, without significant further research, whether settlements mentioned in the early nineteenth century were subsidiary communities, or late-settled rancherías occupied during or after mission times. We do know that such purely post-conquest settlements were frequently established among the Luiseño, as Oxendine (1983) attests.

This problem invites us to step back for a moment to consider the bases for our knowledge about the distribution of clan territories in the project region. In other regions of southern California, Harrington, Strong, and other ethnographers succeeded in collecting lists of clan territories and constituent villages as they existed in the 19th century. These could be related to some extent to the names of rancherías which appeared in the various mission sacramental registers in the late 18th and early 19th centuries.

In the case of our project region, we do have both mission register and other reliable ethnohistorical information which identifies the major rancherías, which appear to have been the centers of localized clan territories. However, we do not have for the project region the reporting of separate distinctive clan names, as distinguished from ranchería names, that were later reported by Harrington's and Strong's consultants for other areas inhabited by Takic-speaking groups. These territorial clan names were sometimes "nicknames" bestowed by other clans, and sometimes more than one such name might have been used. In cases where Harrington's consultantas referred to clans in Orange County, for instance, they invariably used the name of the principal ranchería as the clan designation.

7.2.1 Temporary Camps

The degree of utilization of temporary residence locales within the clan territory was clearly a function of the size of that territory and the distances traveled from the clan base village to outlying gathering areas. In both the lower Santa Ana River drainage and the San Juan Capistrano region, the distances between clan villages were frequently smaller than in more sparsely settled interior Luiseño areas and in Gabrielino-occupied areas of southeastern Los Angeles County. Nevertheless, we have scattered documentary evidence suggesting that temporary campsites were occupied even in the former areas. The Tomato Springs aguaje east of Irvine in Orange County would appear to constitute an example of this sort of temporary campsite locale, following comments by Harrington consultants.

7.2.2 Inter-Regional Population Movements

A third major type of population displacement involved visits by parties of varying sizes to gathering, hunting, or fishing locales located in the territories of "friendly" clans. These latter clans would have granted permission to the guest parties to exploit certain resources in their territories. Alternatively, these guest groups may have been invited to join the host group in exploiting certain resources in a sort of joint operation, known to have occurred among other Takic-speaking groups in southern California. Although we have little information about seasonal movements of coastal or interior people along the trails, there is a source which mentions interior Luiseño migration to coastal areas in the summer time. This would correspond

to a major fishing season on the coast. It is elsewhere suggested that items like agave were obtained from the Cahuilla, sometimes at redistributive feasts, and brought down to the coast for consumption (Harrington 1986: Reel 122: Fr. 121)

The conclusions we have reached on the distribution of ranchería sites named in sacramental registers, and on the population magnitudes, marriage ties, and social organization of these communities has lead us to consider how these local social/political units occupied the resource landscape in relation to one another. It is clear that discrete bounded territorial units existed in these areas, centered at permanent year-round residence centers with ceremonial enclosures and cemeteries. We do not see evidence for larger territories centered around distinct winter and summer residence centers, as suggested by Ross (1970). Nor can we entirely accept settlement models stressing the dispersed nature of settlement within political territories, as suggested by Rice and Cottrell's "dispersed sedentary community" model, or Hafner's "dispersed village" concept, which may well have applied to earlier hsitorical periods. It is clear that satellite habitation areas existed within ranchería jurisdictions, but these were outliers, more or less temporary or contingent, of permanent central habitation and political centers which were occupied for historically long periods of time. It is also clear that coastal and montain/interior environmental zones fell within different ranchería jurisdictions.

The identification of the degree of diversity of environmental zones *within* the ranchería territories was noted as complicated by several factors. Principal among these is the difference between high value resource zones in political territories and the lower value resource zones. Rancherías thus competed for access to high value resource zones such as river courses, so that the principal communities and their surrounding political territories could be located quite close together along stream and river courses, while the "back ends" of their territories opening onto terrain far from the river could be considerably more extensive and ill-defined. Despite these difficulties we can identify approximate rancheria territories for some regions. There appear to be differences in ranchería territory sizes, in some cases at least, according to population size. In other cases, rancherías of a given population magnitude located near the coast appear to command smaller land areas within their territorial mass than rancherías located inland. This would represent a sort of process of increasing territorial circumscription as population increased.

The two patterns we have just mentioned- large ranchería populations with large territories, and large ranchería populations with small territories- also may represent the workings of two counterposed political processes- fission and fusion. We have noted the ethnographic evidence from interior Takic-speaking groups for a process of fission of clan-ranchería units into several daughter units as populations increase. This process would lead to territorial circumscription as populations increased and the number of competing ranchería political territories also increased on a non-expanding territorial base. A countervailing process would be that of ranchería units increasing in both population and territory without suffering any splitting apart of the sociopolitical structure. In the latter case, clan chiefs would continue to command ever larger populations and perhaps even larger territories. The latter case might occur if subsidiary populations and their leaders were absorbed into large, politically influential ranchería territories.

As we have noted, the evidence for territorial expansion is very circustantial as yet, although the existence of very large ranchería power centers does raise this possibility.

The kind of arrangement of political territories across the resource landscape that we have suggested did not leave ownership of resources undefined. Given this sort of closure in the system, it is clear that both ceremonial exchange of food resources and the political granting of gathering permission were important mechanisms for moving food resources around. The timing of the ceremonial season seems to have varied in different regions of southern California, although both winter and mid-spring are mentioned. In the former case, acorns and pinyon nuts collected in the autumn were available as stored resources at a time when susbsistence gathering activities would not interfere. In the case of invited gathering expeditions, timing was a function of the resource in question, with summer and fall being the most important seasons.

In our review of information on exploitation of subsistence resources, we have emphasized the importance of terrestrial plant foodstuffs even for coastal communities. A principal issue here is whether hard seeds may have played the predominant role in caloric intake, or whether acorn consumption may also have contributed an important share. We would tend, on the basis of evidence from other areas, to see an important role for the acorn, although such a conclusion must remain somewhat speculative. Basic to our approach to this issue is a conviction that the acorn, given its abundance and storability, played a major role in permitting the long-term growth in coastal littoral populations to the magnitudes that we have indicated in this study. It seems less likely that this could have been acheived on the basis of hard seed regimes alone. Such a role for acorn consumption implies a system of flow of acorns into coastal plain areas from the valley and foothill zones where oaks were found. While some riparian zones within the project region did support appreciable stands of oaks, the production from these may not have been sufficient for the region as a whole.

8. Conclusion

We have been able to describe and evaluate a series of fundamental problems affecting the applicability of mission sacramental register data to community population reconstruction. The description of the social and demographic characteristics of a community such as Puvuŋa turns out to be less of a straight forward analytical exercise than it would be in the case of data from certain other California missions. This has been due not only to the circumstances of how sacramental register data itself was recorded, but also to other factors. The regional colonial socioeconomic system as it affected native communities in Los Angeles and Orange Counties, and the nature of local political leadership, helped explain the incompleteness of recruitment of individuals from specific rancherías to the various missions.

Yet it is perhaps precisely because of the incompleteness of the mission register population data, the neccessity of reanalysing and reinterpreting it, that addressing the deficiencies in it is so important. This is because otherwise the community population totals may be taken from the baptismal registers at face value, a procedure liable to lead archaeologists to very erroneous conclusions about the nature of population, settlement, and social organization among coastal

Takic-speakers. The apparent incompleteness of the data has posed a considerable problem, to the extent that doubts have been expressed about the feasibility of employing the data at all.

Jackson, writing on the demography of native mission populations in Central California, has recently commented:

> There is currently no way to accurately establish the relationship between the mission populations and the general Indian populations. What percentage of the total Indian population in a given region entered the mission records? Since this question cannot be realistically answered, an analysis of mission demographic patterns cannot be used to discuss patterns for the general population (Jackson 1987: 253)

We have argued that there are ways around the difficulty which Jackson has identified. We have utilized several methods intended to deal with the problem of missing population data for individual communities. We have recognized that these approaches, per se, are most effective in providing minimum rather than maximum community population magnitude estimates. We do, however, have the means to cross-check these estimates against other types of population data, particularly explorer's accounts, in the cases of specific individual communities. In addition, we have inferences available from site settlement patterns, from the archaeological research done on contact-era village sites, and have other ethnographic and ethnohistorical information on village sizes and social organization, all of which help us to refine our evaluations of village size estimates in different settings. It is also to be kept in mind that the clear variations in the degree of completeness of community population data also provide an analytical tool for dealing with the problem. The fact that communities recruited to the missions over a short span of time usually have a considerably more complete appearing age-sex population structure than do those whose populations trickle in over a long period provides an indication of greater degree of data completeness in the former case.

It should be possible to satisfactorily deal with the issue Jackson raises, with continued painstaking cross-checking work. This must rely particularly on using mission sacramental register data for interior sites where both explorer's accounts and archaeological data are available. It is particularly important that the potential of archaeological research be brought to bear on the problem. This, however, will require that California archaeologists become attuned to the techniques and orientations required to identify and excavate domestic architectural features at these interior sites. It is fair to say that this has not heretofore been a particular strong point of much of California archaeology. Yet the use of archaeological research as a means of attacking problems of settlement and household demography will require a sensitive handling of architectural features of permanent settlement sites.

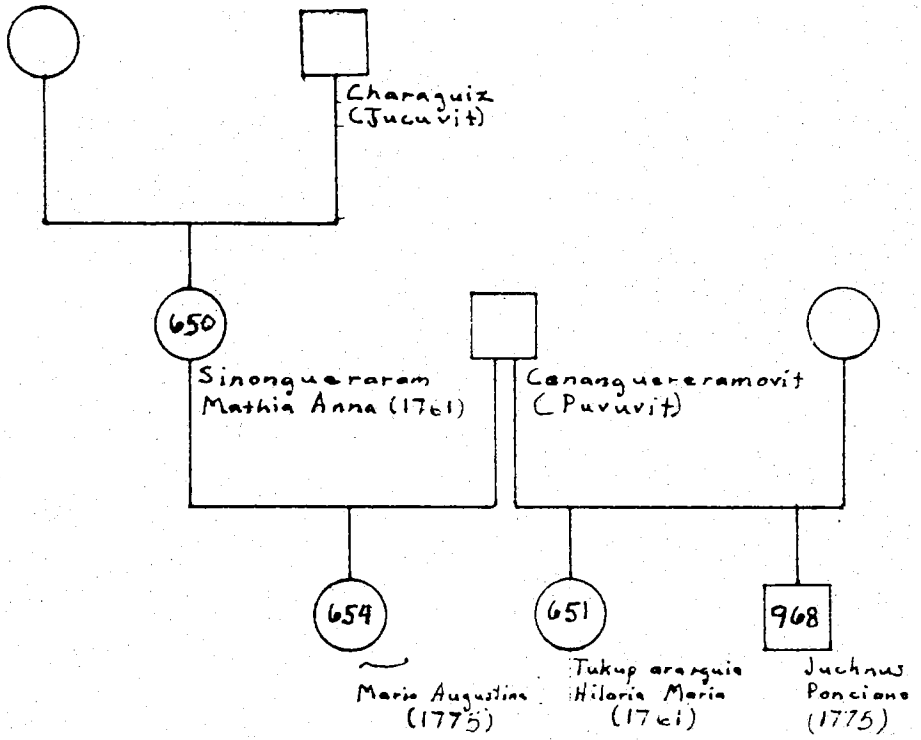


Chart 1 Cenanguereramovit family of Puvuvit S.J.C.

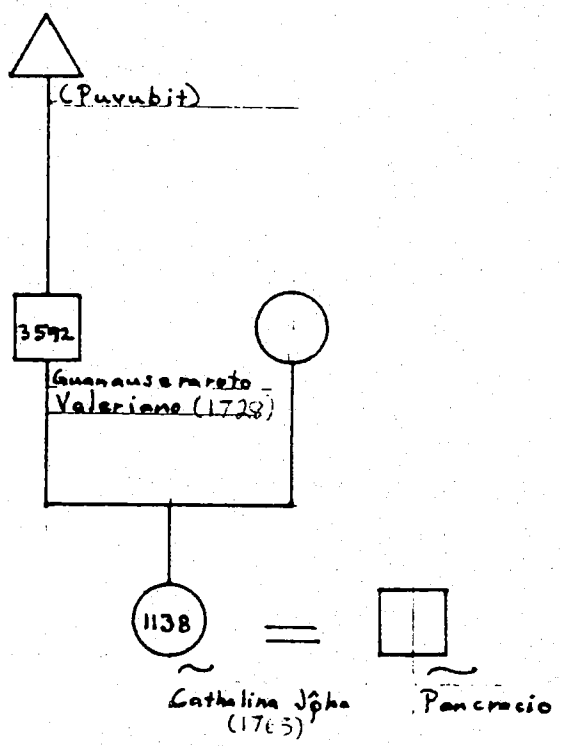


Chart 2 Guanausemaroto family of Puvubit

S.G.

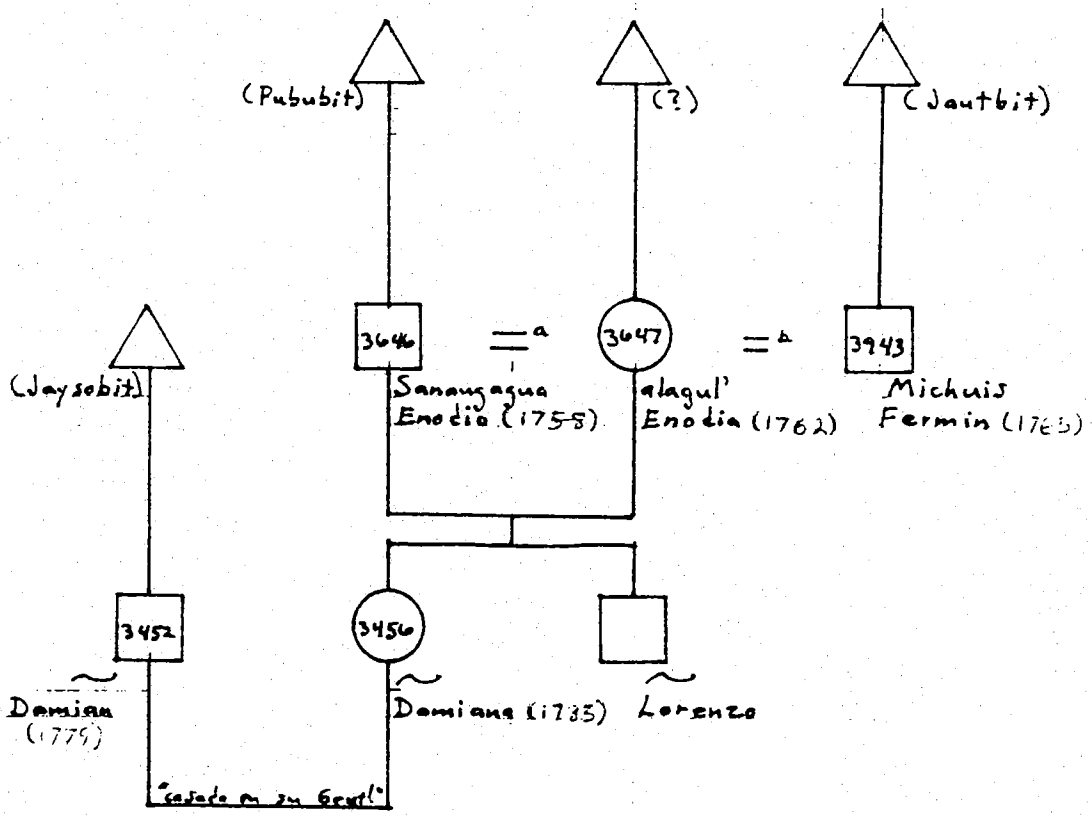
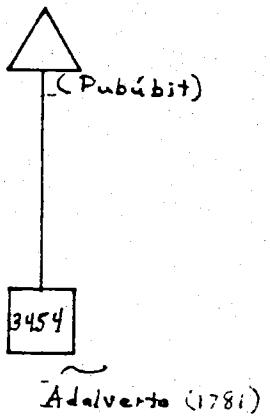


Chart 3 Sanaugagua family of Pububit

S.G.



.Chart 4 .Adalverto family of Pubúbit
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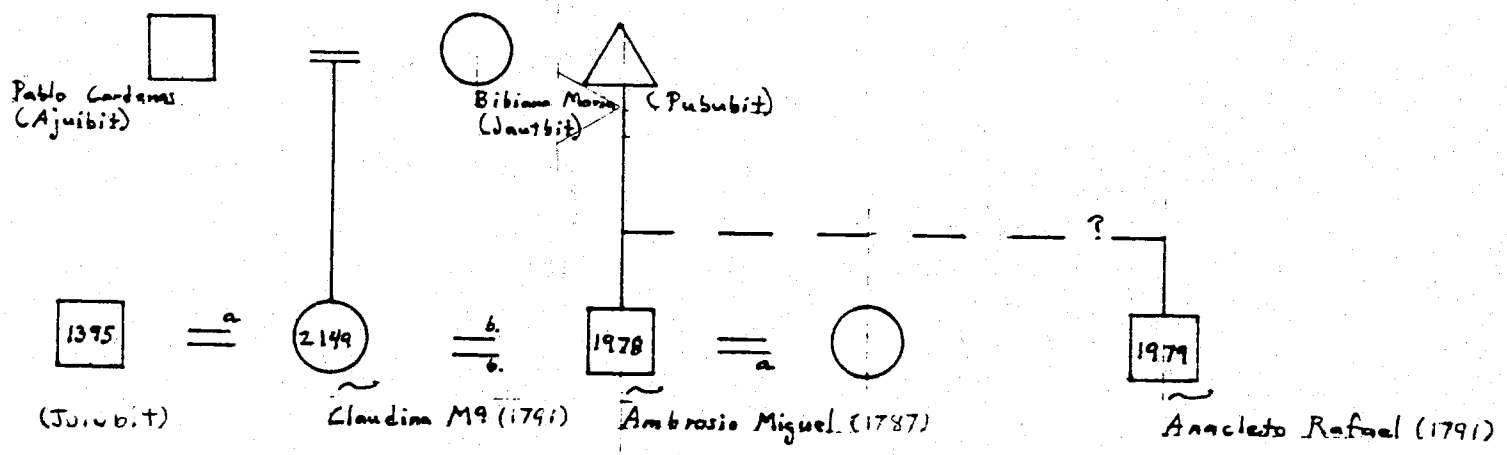

Chart #5 Ambrosio Miguel family of Pububit S.G.

(Pablo Cardenas family of Aju...

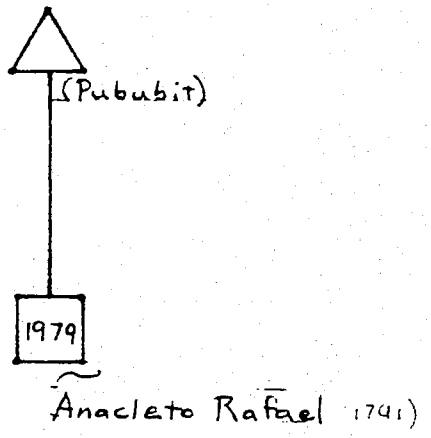

Chart 76 Anacleto Rafael family of Pububit S.G.

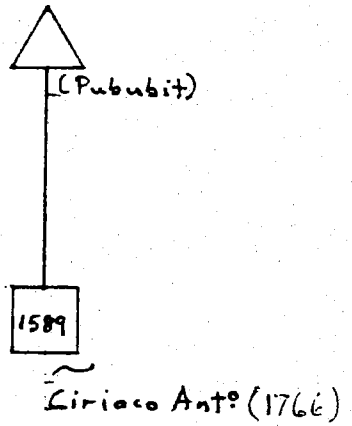

Chart #7 Ciriaco Antº family of Pububit

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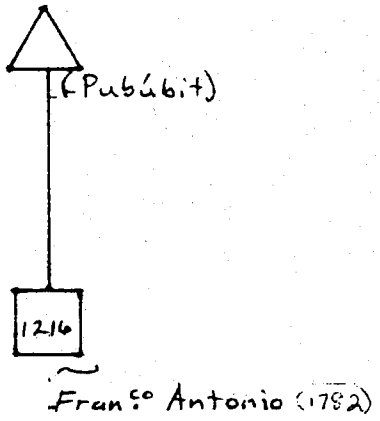

Chart 8 Franco Antonio family of Pubúbit S.G.

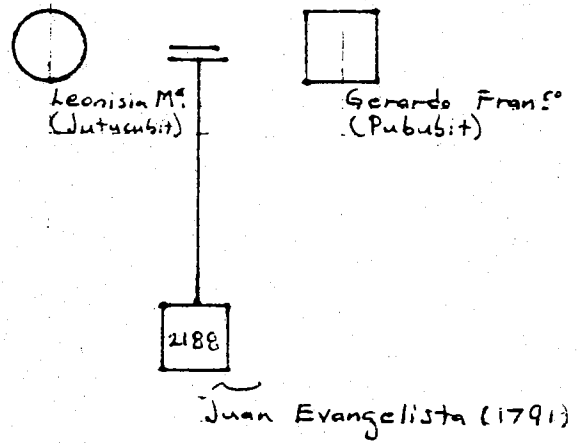

Chart 9 Gerardo Franco family of Pububit S.G.

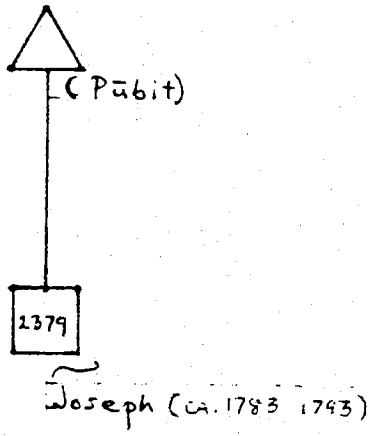

Chart 10 Joseph family of Pūbit

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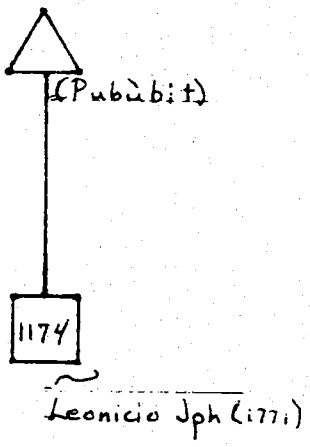

Chart II Leonicio Jph family of Pubub

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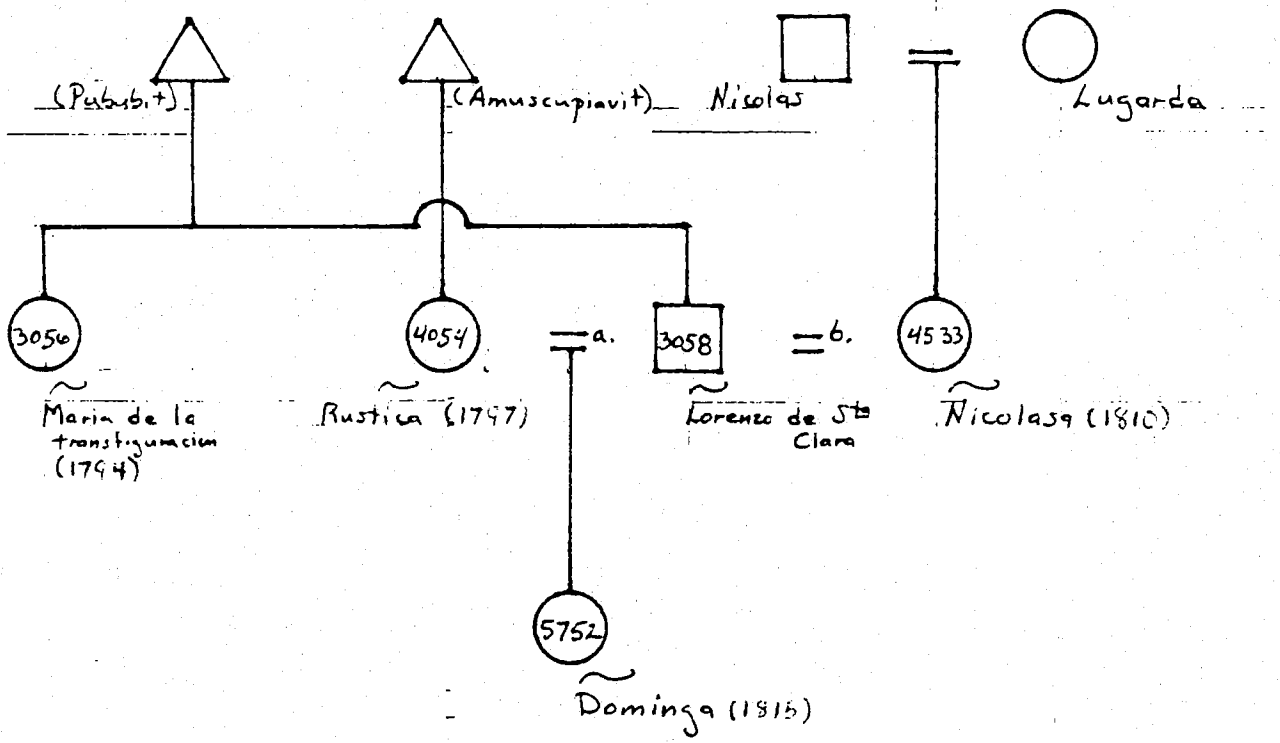

Chart 12 Lorenzo de Sta Clara family of Pububit S.G.

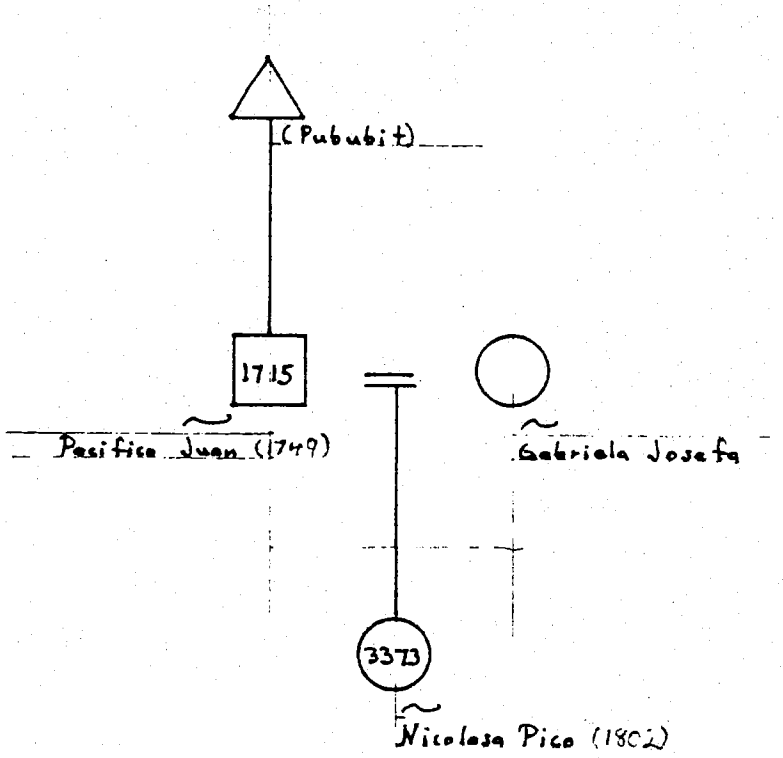

Chart 13 Pacifico Juan family of Pububit S.G.

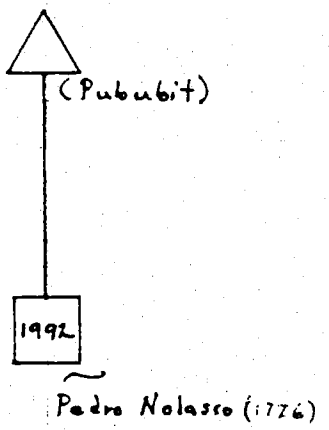

Chart 14 Pedro Nolasco family of Pubub

S.G

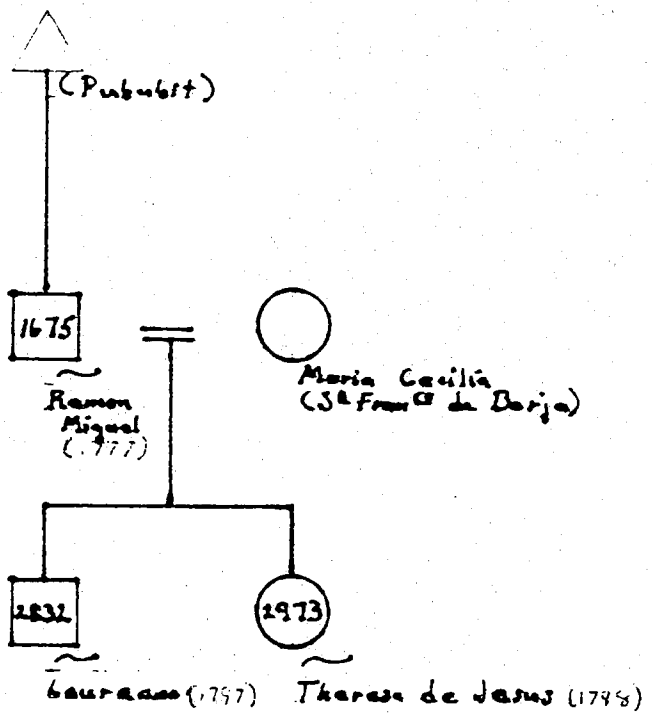

Chart 15 Ramon Miguel family of Pububit S.G.

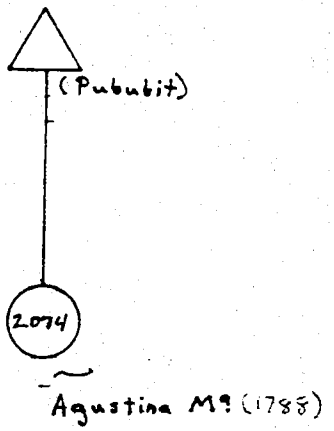

Chart 16 Agustina Mq family of Pubub

S.C

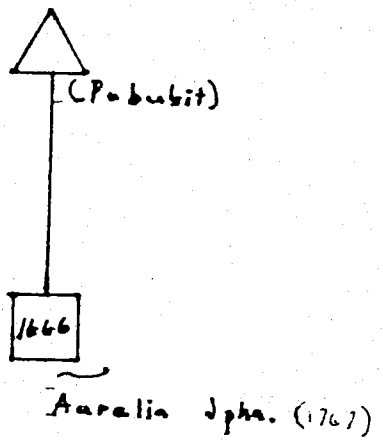

Chart 17 Auralia Jphn family of Pububit
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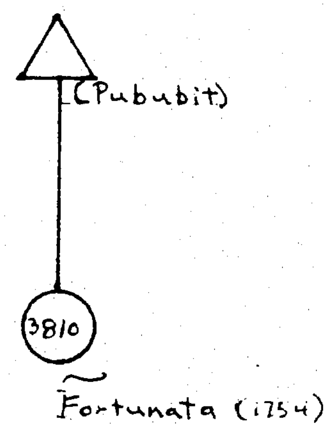

"Con una de [illegible] Casada con [illegible]"

Chart 18 Fortunata family of Pububit

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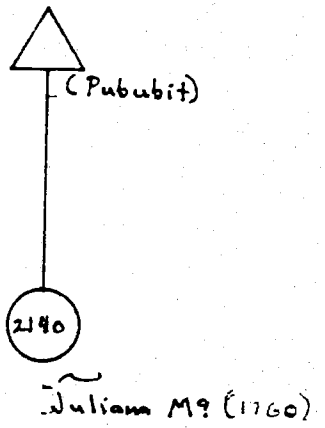

Chart 19 Juliana Mq family of Pububit

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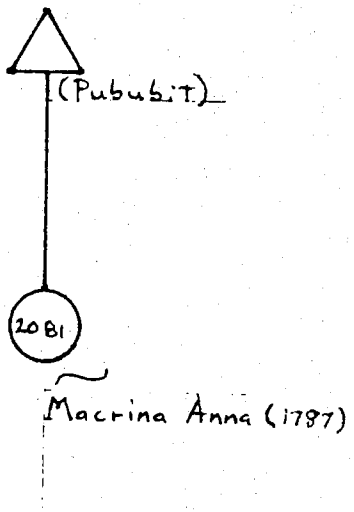

Chart 20 Macrina Anna family of Pububit

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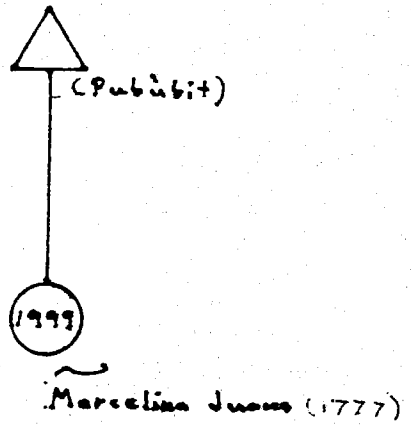

Chart 21 Marcelina Juan family of Pubùbit

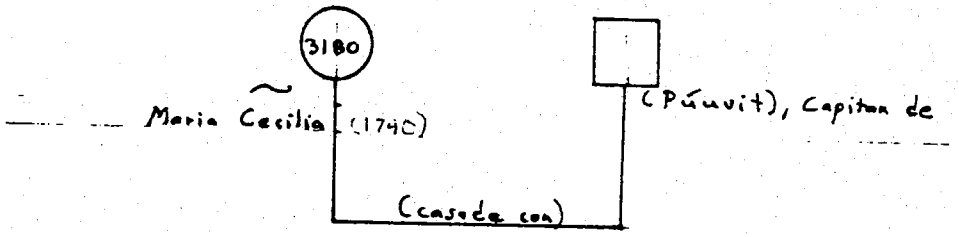

Chart 22 Maria Cecilia family of Púuvit

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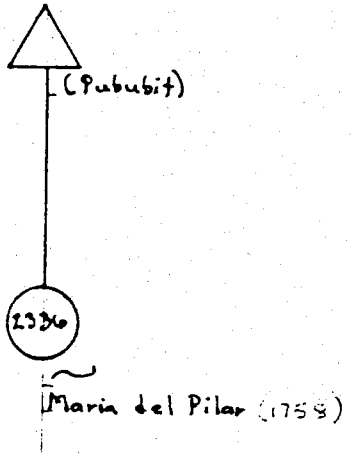

Chart 23 Maria del Pilar family of Pububit

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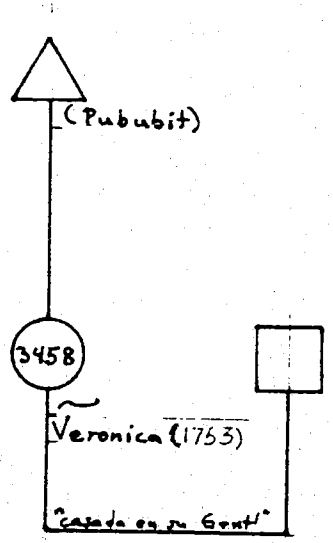

Chart 24 Veronica family of Pububit

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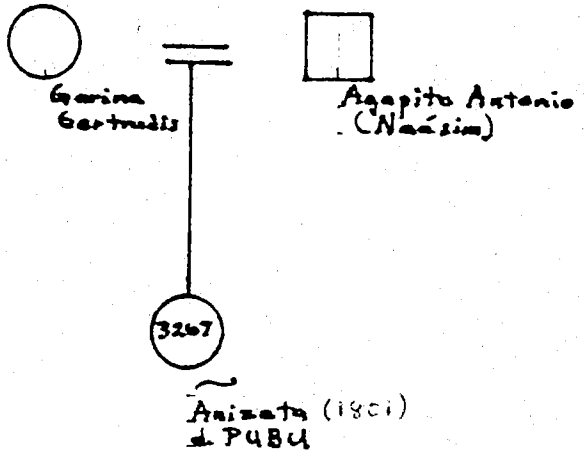

Chart 25 Agapito Antonio family of Naásim S.G

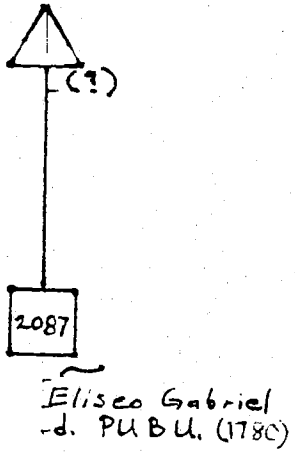

Chart #26 Eliseo Gabriel family of ?

S.G.

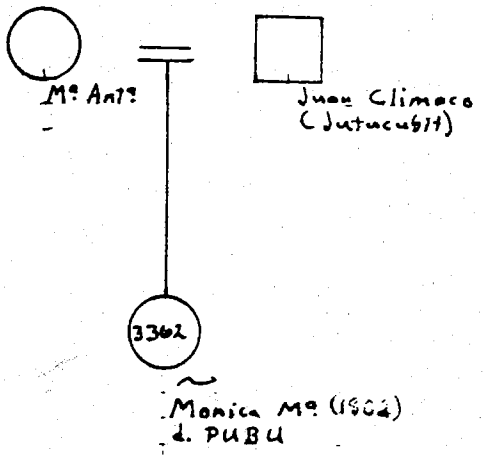

Chart 27 Juan Climaco family of Jutucubit S.G.

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APPENDIX 2

COMPARISON OF 1850 CENSUS DATA WITH PAYROLL RECORDS FROM RANCHO LOS ALAMITOS

William McCawley

APPENDIX 2

COMPARISON OF 1850 CENSUS DATA WITH PAYROLL RECORDS FROM RANCHO LOS ALAMITOS

The Census of 1850

Column 1. -Dwelling-houses numbered in order of visitation.
" 2. -Families numbered in order of visitation.
" 3. -The name of every person whose usual place of abode on the first day of June, 1850, was in this family.
" 4. -Age.
" 5. -Sex.
" 6. -Color (White, black, or Mulatto, Indian[1]).
" 7. -Profession, Occupation, or Trade of each Male Person over 15 years of age.
" 8. -Value of Real Estate owned.
" 9. -Place of Birth (Naming the State, Territory, or Country).

Names printed in bold may correspond with names appearing on the April 1, 1852 payroll records for Los Alamitos (see below).

1	2	3	4	5	6	7	8	9
322	322	Vicente Soltero	25	M		Laborer		Ca
		Maria Antonia	20	f				Ca
		Jose Zotello	50	M		Laborer		Ca
323	323	Antonio Avila	60	M		Overseer		Mex
		Miguel Gonzalez	35	M		Laborer		Mex
324	324	**Jose Zoila**	30	M	I	Laborer		Ca
		Lionicia	20	f	I			Ca
		Manuel	12	M	I			Ca
		Refugio	6	f	I			Ca
		Maria Jesus	4	f	I			Ca
		Francisca	1	f	I			Ca
325	325	**Juan De Mapa**	33	M	I	Laborer		Ca
		Materna	16	f	I			Ca
		Francisca	4	f	I			Ca
		Paulino	36	M	I	Laborer		Ca
		Maliriana	30	f	I			Ca
		Maria Soledad	15	f	I			Ca
		Luis	10	M	I			Ca
		Francisco	8	M	I			Ca
		Paublino	6	M	I			Ca
		Isidora	3	f	I			Ca
		Juan Jose	2	M	I			Ca
		Jose Antonio	8/12	M	I			Ca

1	2	3	4	5	6	7	8	9
326	326	**Fernando**	30	M	I	Laborer		Ca
		Carlota	20	f	I			Ca
		Antonia	6	f	I			Ca
		Madalena	2	f	I			Ca
		Rafael	31	M	I	Laborer		Ca
		Pedro	8	M	I			Ca
		Gregorio	40	M	I	Laborer		Ca
		Bernal	25	M	I	Laborer		Ca
		Tomasa	16	f	I			Ca
		Teodora	30	f	I			Ca
		Maria Rosaria	15	f	I			Ca
		Agrapino	40	M	I	Laborer		Ca
		Ambrosio	40	M	I	Laborer		Ca
		Vicente	14	M	I			Ca
		Sinto	8	M	I			Ca

Wages a/c at the Alamites to 1st April 1852

(Accounting data omitted)

Names printed in bold may correspond with names appearing on the 1850 Census

Juan de Mata
Fernando
Soila
Pascual
Rosaria
Vicente (Shepherd)
Luis
Guadaloupe Ruis
Rafael G. Figueroa
Juan Jose**Vicente (Vaquero)**
Ramon Soto (Mayordomo del Campo)
Miguel Gonzales (Shepherd)
Rafael (Shepherd)
Francisco Chapo
Jose Maria (Vaquero)
Paulino's boys

APPENDIX 3

COMPARISON OF 1860 CENSUS DATA WITH PAYROLL RECORDS FROM RANCHO LOS ALAMITOS

William McCawley

APPENDIX 3

COMPARISON OF 1860 CENSUS DATA WITH PAYROLL RECORDS FROM RANCHO LOS ALAMITOS

The Census of 1860: San Pedro Township

Column 1. -Dwelling-houses numbered in order of visitation.
" 2. -Families numbered in order of visitation.
" 3. -The name of every person whose usual place of abode on the first day of June, 1850, was in this family.
" 4. -Age.
" 5. -Sex.
" 6. -Color (White, black, or Mulatto, Indian[1]).
" 7. -Profession, Occupation, or Trade of each Male Person over 15 years of age.
" 8. -Value of Real Estate owned.
" 9. -Value of Personal Estate.
" 10. -Place of Birth (Naming the State, Territory, or Country).

Names printed in bold may correspond with names appearing on the June, 1860 payroll records for Los Alamitos (see below).

1	2	3	4	5	6	7	8/9	10
1661	1618	**Charles M. Forbes**	25	m		Overseer		Ca
		Miguel	21	m		vaquero		"
		Jose Benito	25	m	Ind	"		"
		Ramon Serran	30	m		"		"
		Tomas Bermudes	20	m		"		"
		Pedro Andreda	22	m		"		"
		Pedro Lugo	18	m		"		"
		Jesus Campos	19	m		"		"
		Jose de la Cruz	22	m		"		"
		Pedro Verdugo	24	m		"		"
		Rosaria	25	f	Ind	Servant		"
1662	1619	**Paulino**	40	m	"	Cook		"
		Maria	20	f	"			"
		Soledad	21	f	"			"
		Isidora	15	f	"			"
		Maria	12	f	"			"
		Juan	10	m	"			"
		Santos Alviso	32	m		Vaquero		"
		Jesus Penderini	18	m		"		"
		Tomas Pico	19	m	Ind	"		"
		Leonardo Talamantes	20	m		"		"
		Jacinto Campana	18	m	Ind	"		"

1	2	3	4	5	6	7	8/9	10
		Juan Lugo	20	m		"		"
		Soila	38	m	Ind	Laborer		"
		Celestino Alipas	17	m		Vaquero		"
		Fernanda Caneda	24	f	Ind	Servant		"
		Santiago	25	m	Ind	Vaquero		"
		Venturo	20	m	Ind	Vaquero		"
		Ascension Oliveras	23	f	"	Servant		"
		Juan Capistrano	16	m	"	"		"
		Pedro Vialobo	38	m		Vaquero		Mex
		Juan Jose	15	m	"	"		Ca
		Geronimo	20	m	"	"		"

Census of 1860: Santa Ana Township

1570	1495	**Rosalio Mesa**	23	m		Vaquero		Mex
		Maria	25	f				Ca
	1497	**Nabor**	20	m		"		Mex
		Maria	18	f				Ca
		Bernal	35	m	Ind	Servant		"
	1498	Juan Lago	32	m		Vaquero		Chile
		Jose Quajado	25	m	Ind	"		Ca
		Nabor Bermudes	25	m		"		"
		Jesus	20	m	Ind	"		"
		Santos Albitre	30	m		"		"
		Juan Manriques	28	m		"		"
		Chino	22	m	Ind	"		"
		Vicente	20	m	"	"		"
		Antonia Olivas	20	f				"

Adjuste de Cts. del Mes de Junio 1860

(Accounting data omitted)

Names printed in bold may correspond with names appearing on the 1860 Census

Juan Manriques
Jose Benuto
Nabor Mesa
Roman Serrano
Tomas Bermudes
Pedro Andrada
Pedro Lugo
Jesus Campos
Guadalupe Ruis
Jose de la Cruz
Roselio Mesa
Pedro Verdugo
Rosario

Paulino
Santos Alvisa
Jesus Perdirini
Tomas Pico
Leonardo Talamantes
Jacinto Campana
Juan Lago
Soila
Celestino Alipas
Vicente Quay
Jose Olivares
Fernanda Caneda
Santiago
Ventura
Jose Ortiz
Sension Olivares
Juan Capistrano
Pedro Villalobos
Juan JoseJeronimo
Miguel Forbes
Silverio Medina
Silvestre Mireles
Jose Tores Soto
Chas Forbes

APPENDIX 4

CORRESPONDENCE

Michael Baksh

ATTACHMENT 1

MOST LIKELY DESCENDENTS

MOST LIKELY DESCENDENTS

Name, address, telephone	Tribal affiliation
Martin Alcala 1037 1/2 Pleasant View Venice, CA 90291 (310) 396-1165	Gabrielino
Cindi M. Alvitre 3462 Avocado Riverside, CA 91720 (909) 276-1161	Gabrielino
Vera Rocha 3451 Remey Avenue Baldwin Park, CA 91796 (818) 962-8546	Gabrielino
Jim Velasquez 1226 West Third Street Santa Ana, CA 92703 (714) 547-4237	Gabrielino
Philip Ibanez 46747 Pala Road Temecula, CA 92390 (714) 321-7682	Luiseno
Vincent Ibanez P.O. Box 181 Temecula, CA 92390 (909) 676-5568	Luiseno
Jeannie Miranda P.O. Box 1477 Temecula, CA 92390 (909) 676-2768	Luiseno
David Belardes 31742 Via Belardes San Juan Capistrano, CA 92675 (714) 493-4933	Juaneno

Bernard Alvitre

Lillian Robles

ATTACHMENT 2

MICHAEL G. BAKSH LETTER (11/4/93) TO JENNIE MIRANDA

TIERRA
ENVIRONMENTAL SERVICES

November 4, 1993

Ms. Jennie Miranda
P.O. Box 1477
Temecula, CA 92390

Dear Jennie,

As you know, I was retained several weeks ago to conduct an ethnographic study concerning issues related to *Puvungna* and its relationship to the location of California State University Long Beach. Your name was provided to me as a "Most Likely Descendents" (see attached list) who I should interview with regard to Native American beliefs about *Puvungna*. The interviews will contribute towards an objective, independent study of ethnohistory, history, and modern Native American beliefs.

My study must be completed in a few weeks, and so I am writing to ask you if we can meet fairly soon to discuss the above topic. I know your schedule is extremely busy; perhaps we could meet for lunch or at some other time that may be convenient for you.

Can you please give me a call? My work phone number is 619-578-9064; my home number is 619-271-7446 (generally after 6:00 pm). I look forward to hearing from you.

Sincerely,

Michael G. Baksh, Ph.D.
Principal Anthropologist

encl.

9903-E Businesspark Ave., San Diego, CA 92131-1120
Phone: (619) 578-9064 ▲ Fax: (619) 578-3646

ATTACHMENT 3

RALEIGH H. LEVINE FAX (10/26/93) TO MIKE BAKSH

STRUMWASSER & WOOCHER
ATTORNEYS AT LAW
100 WILSHIRE BOULEVARD, SUITE 1900
SANTA MONICA, CALIFORNIA 90401

TELEPHONE: (310)
FACSIMILE: (310)

UC D. WOOCHER
EL J. STRUMWASSER
L. DURBIN

IGH H. LEVINE
C INTEREST FELLOW

FAX TRANSMITTAL

DATE: October 26, 1993

TO: Mike Baksh

Fax: 619-578-0573

Telephone: 619-578-9064

FROM: Raleigh H. Levine

NUMBER OF PAGES TRANSMITTED,
including this cover page: 4

COMMENT:

Strumwasser & Woocher and ACLU Foundation of Southern California ask that you and your associates refrain from contacting our clients, listed as plaintiffs on the attached page. The attached letter to counsel for Cal State-Long Beach explains our position.

Briefly, we understand that you have been retained by Cal State-Long Beach to conduct a "cultural review" of the site in question in the litigation. Our clients contend that such a review, which will purportedly include both ethnographic study and invasive archaeological digs and excavation, is unnecessary and illegal, as extant archaeological, historical and ethnographic records make clear that the site in question has profound and long-standing cultural, religious and historical significance as the place that many Native Americans believe was that of the emergence of the deity Chinigchinich and the religion named for him. Given the litigation and your status as an agent of the university, it is inappropriate for you to interview our clients at this time.

do not believe it advisable for our clients to participate in them without appropriate representation.

Very truly yours,

Fredric D. Woocher

cc: Paul Hoffman
Carol Sobel

ATTACHMENT 4

MICHAEL G. BAKSH AND JEFFREY H. ALTSCHUL LETTERS (10/27/93) TO RALEIGH H. LEVINE

TIERRA
ENVIRONMENTAL SERVICES

October 27, 1993

Mr. Raleigh H. Levine
Strumwasser & Woocher
100 Wilshire Boulevard, Suite 1900
Santa Monica, California 90401

Dear Mr. Levine:

I am in receipt of your fax letter to me of October 26, 1993 regarding my ethnographic study of the ethnohistorically-known village of *Puvungna*. Also received is a copy of the letter from Mr. Fredric D. Woocher to Mr. Gregory W. Sanders of the same date and topic.

As I now intend not to contact your clients until instructed otherwise by Dr. Jeffrey Altschul of Statistical Research, Inc., I request that you immediately contact one of your clients to cancel a scheduled interview. Specifically, I have an appointment scheduled with Mr. David Belardes for 3:30 pm tomorrow, October 28th, at his home (714-493-4933). If I do not hear from you by 5:00 today confirming that you have cancelled this appointment, I will be obligated, out of professional courtesy to Mr. Belardes, to contact him myself this evening. I am, of course, prepared to keep the appointment should you be able to provide appropriate representation.

On another matter, I must take exception to your apparent misunderstanding that my ethnographic study includes an archaeological component. I am fairly certain that I have never used the phrase "culture review" to describe my ethnographic study and, more importantly, I have always explained to the Native Americans involved in this matter that no archaeological excavation of the site is planned.

Finally, as a professional anthropologist who has strived throughout my career to produce the most objective and best quality research possible, and to uphold the ethics of the profession, I was disheartened by your interpretation that I am "acting as an agent of the University" and by your apparent implication that my ethnographic findings could be influenced by the university. Ethics aside, it would not behoove me from a practical standpoint to in any way compromise my reputation or integrity among Native Americans as a researcher of Native American cultures.

Sincerely,

Michael G. Baksh

Michael G. Baksh, Ph.D.
Principle Anthropologist

cc: Mr. Jeffrey Altschul, Statistical Research, Inc.
Mr. Gregory W. Sanders, Nossaman, Guthner, Knox & Elliott

9903-E Businesspark Ave., San Diego, CA 92131-1120
Phone: (619) 578-9064 ▲ Fax: (619) 578-3646

STATISTICAL RESEARCH

Cultural Resource Management Consultants

2500 N. Pantano, Suite 218
P.O. Box 31865 Tucson, Arizona 85751
(602) 721-4309
(602) 298-7044 (FAX)

October 27, 1993

Ms. Raleigh H. Levine
Strumwasser & Woocher
100 Wilshire Boulevard, Suite 1900
Santa Monica, CA 90401

VIA FACSIMILE

Dear Ms. Levine,

On October 26, 1993, Dr. Michael Baksh received a facsimile transmission from you asking him to refrain from contacting certain individuals named as plaintiffs in a lawsuit against the trustees of California State University, Long Beach. Dr. Baksh also received a fascimile from Mr. Frederic Woocher, outlining your firm's position.

Dr. Baksh is under contract with my firm, Statistical Research, Inc., to conduct ethnographic interviews with knowledgeable individuals on Native American beliefs concerning issues related to *Puvungna*. I respect these individual's rights to choose whether to participate in this study. No pressure has been exerted on any individual to meet with us, and until your letter no one had indicated a desire not to participate. Indeed, one of your client's, Mr. David Belardes, has an appointment with Dr. Baksh for tommorrow, October 28, 1993 at 3:30 P.M.

There seems to be some confusion over Statistical Research's role in this project. In your fascimile, you indicate that my company has been retained to conduct a "cultural review," which purportedly includes both archaeological excavation and ethnographic studies. I am positive that I have never used this term, and I am not exactly sure what you mean by it. My involvment with the project began last summer when I was contacted by the university to conduct a comprehensive study to include archaeological, ethnographic, ethnohistoric, and paleoenvironmental research. After considering the situation, I decided not to pursue archaeological or paleoenvironmental investigations. An alternative course focused on documenting modern Native American beliefs and a review of the ethnohistoric documents was proposed and accepted. To this end, a team of scholars has been assembled, each to study various aspects of Native American ethnohistory, history, and modern beliefs. As with all my projects, my goal is to be fair and objective. I have been retained by the university, but the study is independent. My contact with the university is limited, revolving around administration of the contract. The university has honored my request that there be no interference either with the conduct of the research or its outcome. Finally, whether archaeological work at the site will be conducted in the future, and whether or not I will be involved are subjects that I have not pursued nor has the university discussed them with me.

I regret that you have advised your clients not to participate in the study. I note, however, that in his letter, Mr. Woocher states that "because the proposed interviews may be used in the litigation, we do not believe it advisable for our clients to participate in them without appropriate representation." If you wish to be present at the ethnographic interviews, we would be delighted to accomodate you. Further, if you or your clients would like to specify certain conditions under which the interviews could take place (i.e., that they be tape recorded or video recorded), or if your clients would like to respond in writing (as opposed to interviews), we will make every effort to meet these desires.

Whatever the outcome of the legal proceedings, the ethnohistoric/ethnographic research should provide a comprehensive statement about the Gabrielino, Juaneno, and Luiseno occupation of the Alamitos Bay region and their current beliefs toward their heritage. I hope that the document is useful not simply as an academic endeavor, but also provides a baseline of historic information on Native American cultures of the Los Angeles area for generations to come.

I realize the situation at Long Beach is politically charged. Every motion one makes is viewed with suspicion. I recognize that my statements of independence and research goals are just that, statements that must be taken on faith. As those that know me will testify, I do not make such statements lightly. My hope is that our work will bring the two sides together; I am a pragmatic person, however. In documenting the history of the region and the beliefs of modern Native Americans, I believe that both sides may see their positions in a new light, and hopefully arrive at an equitable solution.

I hope you will reconsider your decision regarding ethnographic interviews. Regardless, I wish you and your clients the very best.

Sincerely,

Jeffrey H. Altschul, Ph.D.
President

cc: Dr. Michael Baksh, Tierra Environmental Services

ATTACHMENT 5

RALEIGH H. LEVINE LETTER (11/1/93) TO MICHAEL G. BAKSH

STRUMWASSER & WOOCHER
ATTORNEYS AT LAW

100 WILSHIRE BOULEVARD, SUITE 1900
SANTA MONICA, CALIFORNIA 90401

TELEPHONE: (310) 576-1233
FACSIMILE: (310) 319-0156

FREDRIC D. WOOCHER
MICHAEL J. STRUMWASSER
SUSAN L. DURBIN

RALEIGH H. LEVINE
PUBLIC INTEREST FELLOW

Dr. Michael Baksh
Tierra Environmental Services
9903-E Businesspark Avenue
San Diego, CA 92131-1120
Fax: 619-578-3646

BY TELEFACSIMILE AND U.S.MAIL

November 1, 1993

Dear Dr. Baksh:

This letter will serve to memorialize our telephone conversation last week in which I responded to your letter of October 27, 1993. As you requested in the letter, we have spoken to David Belardes and told him of our communications with you.

As I explained on the telephone, we did not intend to imply that your ethnographic study would include an archaeological component. Rather, our understanding is that the university plans to conduct what it calls a "cultural review" of the site, which apparently would include both an ethnographic study, for which you have been retained, and archaeological digging and excavation, in which you have made clear you will not take part.

You said in your letter of October 27 that you "have always explained to the Native Americans involved in this matter that no archaeological excavation of the site is planned." That has not been the university's position. Instead, the university has claimed that such excavation may in fact be necessary for it to ascertain the cultural, religious and historical significance of the site. If you can guarantee that no archaeological digging, excavation or other invasive procedure will take place on the land at issue (which is bounded by Bellflower Boulevard, the Los Cerritos channel, State University Drive, and the southern border of the campus), please let us know immediately.

Finally, as someone who has been retained by the university to carry out a study on its behalf, you are legally an "agent" of the university. We certainly did not intend you to infer from the use of the term "agent" that we believe that your findings will be influenced by your role; we would hope and assume that, as you have assured us, you would not compromise your ethics, reputation or integrity on behalf of your employer.

Rather, we simply meant that because statements you take from the Native Americans represented by the ACLU and Strumwasser

& Woocher could be used in the litigation between them and your employer, it would be imprudent for us not to advise them that they should not participate in such interviews without appropriate representation.

One last note for the record: Our conversation clarified that I am a woman and that I am not yet an attorney licensed to practice in California.

Thank you for your cooperation.

Very truly yours,

Raleigh H. Levine

cc: ACLU Foundation of
Southern California

ATTACHMENT 6

LONG BEACH ETHNOGRAPHY QUESTIONNAIRE

i. Its location (or locations if the term was used to describe more than one area, or to describe areas used at different times such as over the course of a year).

ii. The size or area that it covered or covers. For example, is it a large regional area that might include portions of Long Beach or L.A. County and Orange County, is it a village, is it a small area that might have been part of a larger village site, is it a place that is difficult to define, or what?

c. Based upon what you know, have heard, or feel, what is the relationship, if any, between the location of *Puvunga* and the CSULB campus?

i. More specifically, what is the relationship between *Puvunga* and the archaeological site recorded as LAN-234/235?

ii. Also, what is the relationship between *Puvunga* and the larger 22-acre parcel that contains LAN-234?

d. In what ways, if any, do you consider the 22-acre parcel on the CSULB campus to be important?

i. Do you know of or have you been told that certain types of ceremonies were carried out at this location in the past? If so, what types? Who were the people that used the area?

ii. Do you know of or have you been told that this location was used for other activities in the past, such as for use as a village site?

iii. Is the 22-acre parcel or a portion of it presently used for any ceremonial and/or other uses? If so, what are these uses?

iv. To what extent, if any, is the 22-acre parcel or some portion of it a sacred location for you?

e. Do you know, have you been told, or do you feel that the 22-acre parcel or a portion of it is connected with the rise of *Chingichngish* or with the Gabrielino culture hero *Wuyoot*? If so, please tell me about this connection.

4. Is there anything else you would like to discuss or tell me about?

5. Are there things you cannot discuss with me?

6. Who else should we talk to?