

POMO GEOGRAPHY

BY

FRED B. KNIFFEN

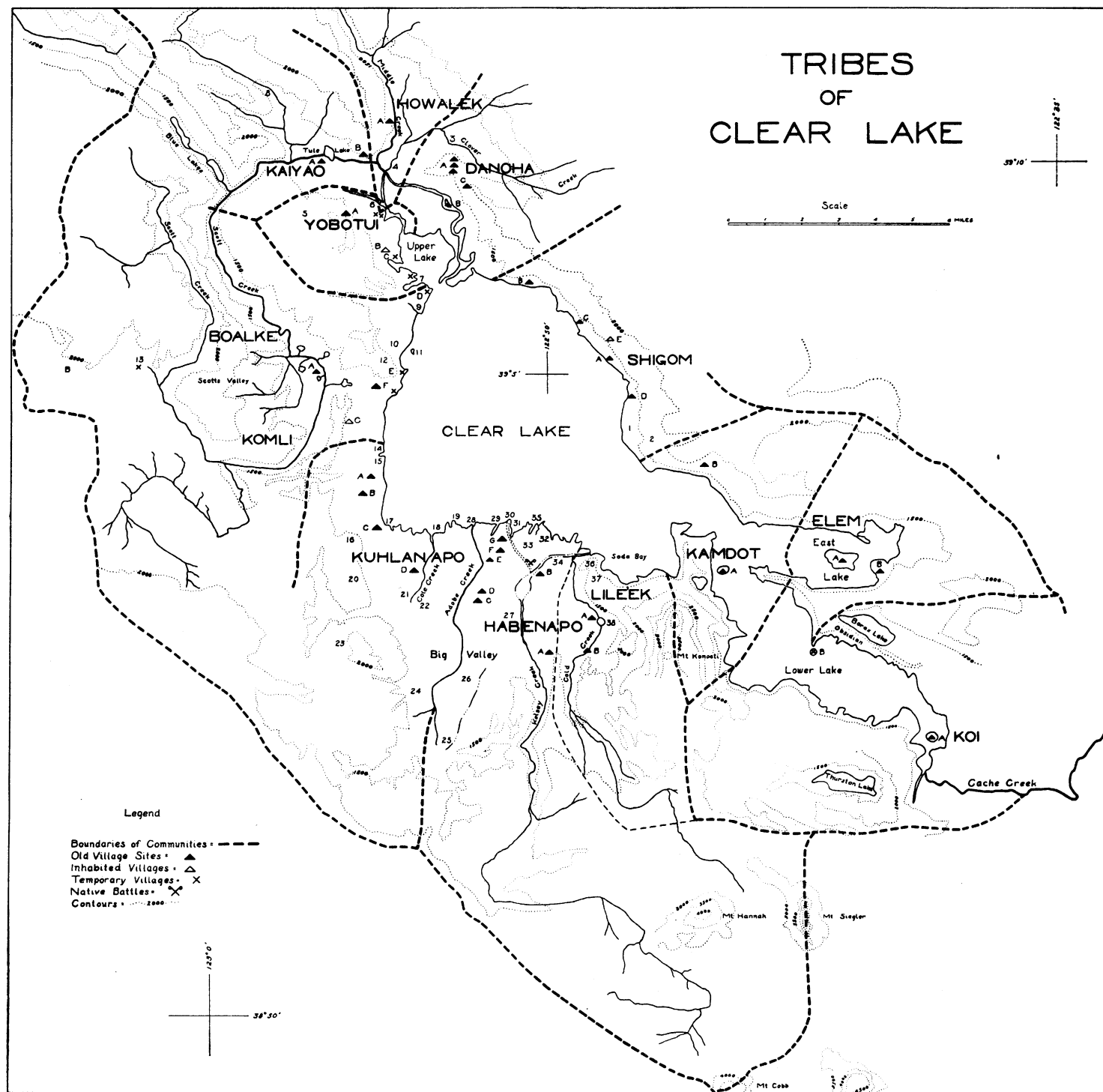
UNIVERSITY OF CALIFORNIA PUBLICATIONS IN AMERICAN
ARCHAEOLOGY AND ETHNOLOGY

Volume 36, No. 6, pp. 353-400, plates 5-7, 3 maps

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY, CALIFORNIA

1939

KEY TO MAP OF CLEAR LAKE



Map. 1. Pomo of Clear Lake.

Shigom

- A Shigom
- B Bududa
- C Halika
- D Taawina
- E Modern village
- 1 Sand beach
- 2 Ketsidano, red mountain

Danoxa (Danoha)

- A Danoxa
- B Badonnapoti (Bloody Island village)
- C Behepal
- 3 Danoxabidame, Clover Creek

Howalek

- A Howalek or Titsmagi
- 4 Taabidame, lower course of Clover Creek

Yobotui

- A Yobotui
- B Danobidao
- C Pulidsiwi
- 5 Gusha-dano, mountain
- 6 Fishing dams
- 7 Kayebidos, bay

Kaiyao

- A Kaiyao
- B Mayi
- 8 Tsiyahabeo, mouth of Daile Creek Canyon

Boalke and Komli

- A Noboral
- B Komli, Eight-mile Valley
- C Debotabel
- D Kabel
- E Nabi
- F Katsamugal
- 9 Datsim-bidame, small fishing stream
- 10 Kobatap, seed-gathering flat
- 11 Kelem, island
- 12 Yeakiaano, lookout hill
- 13 Wilghao, Four-mile Glade

Koi

- A Koi
- B Kaochil

Kuhanapo

- A Boomli
- B Kashibadon
- C Nadabutun
- D Chuwish-bidame
- 14 Gubi, point
- 15 Kaledal, inlet
- 16 Xabe-dano, mountain
- 17 Boxa-bidame, small stream
- 18 Chuwish-bidame, Cole Creek
- 19 Tsalol, point
- 20 Wayoi-dano, mountain
- 21 Aawise, spring
- 22 Sise, spring
- 23 Luuwai-dano, mountain
- 24 Taawina, flat

Habenapo

- A Nonapoti
- B Bidame-wina
- C Nalewini
- D Nalebim
- E Tsailahoi
- F Shabegok
- G Sedileo
- 25 Gixgi-bidame, small stream
- 26 Manatol, flat
- 27 Ghiphaho, flat
- 28 Nalebim-bidame, Adobe Creek
- 29 McGough Slough
- 30 Long tule point
- 31 Hapol, bay
- 32 Haikaolise, "dry wood brush"
- 33 Batsumise, "oaks"
- 34 Sixaho, "brush land"
- 35 Kapashapasha, bay and small stream

Lile'ek

- A Dala-dano
- B Kabetsawam
- 36 Hadano, mountain
- 37 Dadano, mountain
- 38 Shigasho, pond in Cold Creek

Kamdot

- A Kamdot
- B Patolkaleo

Elem

- A Elem
- B Village

POMO GEOGRAPHY

BY

FRED B. KNIFFEN

UNIVERSITY OF CALIFORNIA PUBLICATIONS IN AMERICAN ARCHAEOLOGY
AND ETHNOLOGY

EDITORS: A. L. KROEBER, R. H. LOWIE, R. L. OLSON

Volume 36, No. 6, pp. 353-400, plates 5-7, 3 maps

Transmitted October 2, 1935

Issued July 20, 1939

Price, 50 cents

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY, CALIFORNIA

CAMBRIDGE UNIVERSITY PRESS
LONDON, ENGLAND

CONTENTS

	PAGE
Introduction.....	353
Clear Lake.....	354
Natural landscape.....	354
Cultural landscape.....	358
Tribal groups.....	367
Eastern Pomo: northerly group.....	367
Northern Pomo.....	368
Eastern Pomo: southerly group.....	369
Yukian Wappo.....	370
Southeastern or Lower Lake Pomo.....	370
Conclusion.....	371
Russian River.....	373
The site of Kacha.....	373
The utilization of the site.....	375
Coast Pomo.....	381
The setting.....	381
The cultural landscape.....	384
The annual cycle of activities.....	385
Population.....	388
Comparisons and Conclusions.....	390
Explanation of Plates.....	393

PLATES

5. Typical landscapes of the Clear Lake environment.....	395
6. Typical landscapes of the Russian River environment.....	397
7. Typical landscapes of the coast environment.....	399

MAPS

1. Pomo of Clear Lake.....	<i>facing</i> 355
2. Pomo of Redwood Valley, Russian River.....	374
3. Southwestern Pomo of the Coast.....	382

BIBLIOGRAPHICAL ABBREVIATIONS USED

BAE-B Bureau of American Ethnology-Bulletins
UC-PAAE University of California Publications in American
Archaeology and Ethnology

POMO GEOGRAPHY

BY

FRED B. KNIFFEN

INTRODUCTION

IT IS THE INTENT of this paper to present a cross section of Pomo material life, particularly as it reflects the variation in natural resources and conditions peculiar to the section of middle-western California occupied by the Pomo linguistic group.

With this objective in mind, emphasis is placed on the delineation of the yearly cycle of economic activities, the location of villages, densities of population, and concomitant nonmaterial traits such as political boundaries, trade relations, and land ownership.

In California the major natural contrasts are encountered in a longitudinal direction. Though the Pomo occupy only the westernmost portion of the state, considerable variety exists within their area. Near the eastern margin lies Clear Lake, with its drainage to the Sacramento, its cool winters, its mineral wealth, and its almost profligate faunal abundance. Near the center of the Pomo country lies the Russian River valley, with its level floor, park landscape of oaks, and intermediate natural wealth. Along the coast is the redwood belt, land of gloomy forest, summer fog and winter rain, comparatively deficient in those things which are of use to a primitive culture.

The land of the Pomo lies near the heart of what Kroeber has designated the central California subculture area. Kroeber speaks of the "... makeshift character of central California culture, which in most material concerns is content with a bare sufficiency of attainment provided the means remain the lowest and directest possible. . . ."¹ In two respects, as Kroeber points out, the Pomo carried material traits to high development: basket making and money manufacture.

This perhaps most typically Californian culture is nonagricultural and lacks pottery. The acorn may be regarded as the basic food staple, and is supplemented by seeds, roots, berries, fish, and game. Clothing is marked by its simplicity. Though the semisubterranean dance or assembly house is a fairly complicated structure, the ordinary dwelling partakes of a makeshift character.

Of the nonmaterial side of life the story is somewhat different. Ritualism, in particular, reaches a high stage of development. The status of women is high; there is a tendency toward matrilineal descent. Adolescence rites are meager, though there are strict observances covering menstrual periods.

In the succeeding sections of the paper each of the three striking natural areas, together with the groups occupying it, is considered in some detail. Since each area was undertaken as a separate study there is some difference in scope and method of treatment.

¹ BAE-B 78:243-244, 1925.

CLEAR LAKE

NATURAL LANDSCAPE

The Clear Lake basin is strikingly a natural region. It is a flat-lying area situated between two chains of the Coast Range, which rise rather precipitously to considerable heights above the basin floor. To the north and east the bolder peaks are high enough to simulate conditions found in the Sierra.

The total drainage area of the basin is some 417 square miles,² and the lake itself is about twenty miles long, with a maximum width of seven miles, and an area of sixty-five miles at mean level. Constrictions of the shore divide the lake into four parts, termed Upper Lake, Clear Lake, East Lake, and Lower Lake.

At an earlier geologic period the extent of the lake was greater than it is at present, and the old bed is exposed in broad flats of heavy clay, which are found scattered in the basin, their continuity broken by rounded hills and rocky points rising abruptly above the lake plain. Locally the flats are called "valleys," and may be recognized in such names as Scott's Valley, Big Valley, Bachelor Valley, and Burns's Valley. On its eastern margin the lake abuts against the steep flank of the mountain, broken only here and there by recessions of no great extent. On the west, low hills mark the divide between the main lake and Scott's Valley.

In its northern portion the topography within the basin is characterized by little hills, ridges, bays, and inconspicuous islands, all presenting a graceful smoothness of contour. In the southern part of the basin, about Lower and East lakes, a geologically recent lava flow has thrown up ridges and rocky islands, created canyons and basins, culminating its work in the great mass of Konocti.

With its rainy winter and dry summer the area is quite typically Mediterranean and similar to that of most of northern California. The high ranges surrounding the lake basin show an appreciably greater amount of precipitation, a persistent snow cover in winter, and a contrasting vegetation cover. The significant things about the climate are the hot, dry summers, and the cool, rainy winters with occasional frosty nights.

The drainage features are striking in two ways: in the manner in which the springs, streams, and minor lakes are distributed over the area, and in the seasonal fluctuation of volume of water which these streams and lakes contain. The drainage pattern can nowhere in the area be said to be intricate, but the region from Big Valley along the western shore to Upper Lake is comparatively well supplied with watercourses. Along the eastern shore the situation is reversed and watercourses are indeed rare and insignificant. Upper Big Valley is well watered with perennial springs, and in the lava country around Konocti there are several minor lakes. A number of the important streams broaden into ponds in their upper courses, among them Scott's and Cold creeks.

² A. E. Chandler, U. S. Geol. Surv., Water Survey Paper 45:32.

During the hot dry summer the evaporation from Clear Lake is great, and the increment from its tributaries small, so that before it was controlled there was an annual variation in level of from four to ten feet.³

The watershed is restricted and, although the streams maintain some flow during the winter, their greatest volume follows each successive storm. In midsummer the courses become completely dry, are reduced to isolated pools, or flow only in spots.

A number of agencies have contributed to the destruction of the native vegetation, both species and plant association. The area has been systematically grazed since 1840; lumbering has been highly effective in the removal of certain species; wood has been cut for both domestic and commercial use; land has been cleared for orchards and general farming; tule has been removed from along the beaches. The Indians disclaim all knowledge of former deliberate burning over of tracts of land, though the practice was one widely in use in northern California.

The early use of the area for grazing and the Indians' accounts of hillsides decked with wild oats argue for a former abundance of grass. Writing in 1881, Palmer⁴ says, "In June the grass begins to sere on the mountain sides and there are russet spots surrounded by the green of trees." But chaparral, so conspicuous now, was certainly present then. It was restricted to the areas of poorest soil and least moisture, which generally means steep slopes with a maximum exposure to the sun.

Becker,⁵ working in the area in 1888, after a description of the chaparral, says, "The valleys, on the other hand, are usually free from brush, and like a portion of the hills, are studded with fine oaks, growing as a rule at distances of one or two hundred feet from one another and often as picturesquely disposed as if set out by a skillful landscape gardener."

The Indians describe the valley areas as being covered with large oaks under which there was a dense growth of brush. Here and there were grassy openings, some of which were marshy during part of the year. The streams were lined with a tangle of willow, dogwood, and wild-grape vines.

Tule had formerly a much greater extent than at present. The lake must have been nearly completely lined with it, and it was abundant in the smaller ponds, in the swampy land about Upper Lake, and in Tule Lake. In 1888 Becker⁶ wrote, "A strip of the reeds, from a few feet to a few yards in width, grows almost everywhere along the lake shore, separated from the beach by a few feet of open water . . . scarcely a ripple reaches the shore."

Creeping downward in the protected valleys and spreading widely far up the mountain flanks was the coniferous forest, composed of Douglas fir, sugar pine, yellow pine, and incense cedar, and bounded on the lower, drier slopes by digger pine. Associated with the conifers was the tan oak, once abundant, but early and thoroughly exploited.

³ *Ibid.*, 34.

⁴ L. L. Palmer, *History of Napa and Lake Counties* (San Francisco, 1881), p. 22.

⁵ G. F. Becker, *U. S. Geol. Surv., Mon.* 13:234.

⁶ *Ibid.*, 248.

Perhaps as much modified as the flora is the fauna of the region. With respect to numbers and species very considerable changes have taken place since white occupation. As an example may be mentioned the carp and catfish, now so abundant, certainly introduced since white occupation.

The Indians recognized a great variety of fish. Their Indian names, their known English equivalents, and their striking characteristics may best be presented in tabular form:

<i>Indian name</i> ⁷	<i>English name</i>	<i>Characteristics</i>
hitch	(same)	A small fish that ascended Kelsey Creek in great numbers during high water
chupal	hardmouth	A large fish, a member of the pike family. Ascended streams and remained in isolated ponds all summer
tsilis otonodo		A small chupal Similar to chupal except for larger head. A lake fish; did not ascend streams
shamol	sucker	Several varieties of smaller suckers, one ascending Kelsey Creek, another Adobe Creek, etc.
kashamam	sucker	A large lake sucker, ascending only the streams that have ponds in their upper courses
kom	sucker	A big darkish yellow sucker having horns. Found along part of the eastern shore of the main lake. Spawmed in lake
shaghal	blackfish	Ascend only streams heading in ponds, many spawning in lake around the shores
behowuk tko	perch	A small blackfish A medium-sized perch that ascends to the ponds
tsi	silverside	Somewhat similar to a whitefish, and quite small. Makes its way up to the ponds and out into the flooded meadows
tsawal	goldenside	Found in the lake around the subsurface springs
deta	goggle-eye	A lake fish, never in streams. Found in Soda Bay and in the narrows where Upper Lake, East Lake, and Lower Lake join
mala	trout	A large trout found from December to February in a creek near Bloody Island
?	trout	Small stream-trout found in upper Scott's Creek, lower Adobe Creek (in spring), and probably in upper Kelsey Creek.

⁷ These names are all Eastern Pomo.

<i>Indian name</i> ^s	<i>English name</i>	<i>Characteristics</i>
tsulitsulihó	?	A small fish that ascends the streams in frosty weather
miqush	chub	Found in lower Cold Creek, possibly in other streams
'talo	minnows?	A great variety of small fish, many the young of those mentioned above. Found in the tules in winter.
seyuk	?	Small, similar to hitch

In addition to the fish, there should be mentioned the fresh-water clams, xala, which were found quite widely distributed. Lower Blue Lake in particular was known for its clams; its name was Xalaxa (clam water).

The lake region is noted for its waterfowl even now; formerly there was a much greater abundance. With the first rain of fall they arrived by night, flying from the southeast. In almost countless variety and number they remained on the lake during the winter months. With the last heavy rains of late spring the greater number of them departed for other areas for the summer nesting. Their Indian and English names and something of their characteristics are shown in the following table:

<i>Indian name</i> ^s	<i>English name</i>	<i>Characteristics</i>
xatsiya	mud hen	Probably the most numerous of all, occurring in great flocks
hlal	goose	The generic name
tilohlal	honker	
xabalal	gray goose	
ilduke	?	A small goose
xyyan	mallard	
boxaxyyan	?	The small mallard
koisamur	mallard drake	Green neck
koitatse	canvasback	
bootsia		Similar to canvasback but with black head
mochol	?	Little canvasback
xaboo	?	Big canvasback with mark on rear of bill
tsitultul	widgeon	
koibagiltsia	sprigtail	
xatada	spoonbill	
xadysia	teal	Found in big bands in the meadows
bashabadalat	butterbill	
tana	sparrowtail	
warawarao	fish duck	The redhead variety. Name for black-head not recorded
ghoi	swan	
ghor	sand-hill crane	Abundant in swampy meadows of Big Valley
ghok	shag	
xagunula	loon	(Water coyote)
guker	grebe	
sutkil	hell-diver	

^s These names are Eastern Pomo.

The eagle, crow, falcon, and hawk represented the larger land birds; quail were present. The otter was the most prominent of the water mammals. On land the skunk, rabbit, raccoon, ground and tree squirrels, rats and mice were all plentiful. Among the larger predatory animals were the mountain lion, bobcat, and grizzly. Black bears are still occasionally found. Deer are still abundant in the area, safe in the dense chaparral, and elk were formerly numerous.

These, then, are the elements of the natural landscape: topography, drainage, vegetation, climate, and animal life. In their ensemble they formed the site occupied by a large primitive population; in their individuality they were the mediums through which a primitive culture provided clothing, food, and shelter. As sites go, the region was a favorable one. It provided game as well as acorn, seed, and root gathering quite as well as did adjoining regions. Furthermore, it provided fish and waterfowl in an abundance not rivaled in any adjacent area. The site proved a magnet in attracting peoples less favorably situated. For its residents it provided a necessity to high development of social and religious institutions, namely, leisure.

CULTURAL LANDSCAPE

Occupying the Clear Lake basin were twelve distinguishable Indian groups; a thirteenth occupied the banks of Cache Creek, the outlet stream. In the northwestern section of the basin it was the semi-isolated sections of flat lake plain that offered the nuclei about which these groups were gathered. In spite of the attractions offered by the lake the main settlements were some distance removed from the shore, in the "valleys" along the streams, or adjacent to a spring or to one of the smaller ponds. In the southeastern section, on the contrary, there was a true lake-dwelling population. Here the chief settlements were on islands. Flats and streams are few. Lake fishing and waterfowl hunting must have been the most significant activities in providing the food supply; their pursuit made dwelling near the lake essential.

Clear Lake was overwhelmingly a Pomo lake, that is, in a linguistic sense. There was no political unity, in fact there was not true linguistic unity, as three distinct dialects or languages of Pomo were represented. Three other linguistic groups, Miwok, Wappo, and Patwin, were represented permanently or intermittently. Miwok occupied territory around Cache Creek, Wappo Lile'ek shared part of Big Valley with the Habenapo. Palmer⁹ quotes Powers to the effect that a party of Patwin, driven out of Long Valley in a civil war, had for a time occupied territory near the head of Clear Lake.

Kroeber¹⁰ has fittingly designated these thirteen subgroups "village communities." It appears that for each there was a main village which served as headquarters, contained the sudatory and dance house, and was lived in during off seasons. Main village sites were shifted a good deal throughout a period of time. The occupied sites became filthy through continued occupation; firewood grew scarce; the roofs of the sudatory and dance house became

⁹ *Op. cit.*, 30.

¹⁰ *Op. cit.*, 356.

unsafe; pestilence invaded the village, and the site was deserted. This must have happened many times in the dim past, but few records of concrete instances are obtainable. The village of Matuho was situated near the junction of Cold Creek with the east fork of the Russian River. Because of an epidemic of something resembling diarrhoea the site was abandoned about 1835 and has not since been occupied.

For each of the village communities there was one and sometimes more chiefs. The office appears not to have been rigorously hereditary, other factors making themselves felt. The retiring chief had some word in the choice of his successor. He felt the responsibility of his office and desired to be worthily succeeded. At least among the people of Shigom there was also a war leader, and each dwelling containing several families of relatives had its house chief.¹¹

If our information is correct, there was great divergence in practice among the Clear Lake Pomo with respect to land ownership. The Southeastern Pomo, those dwelling about Lower and East lakes, recognized family ownership of plots fronting on the lake.¹² Among the remaining village communities private ownership extended only to certain pepperwoods, oaks, pines, and seed-bearing plants. Here the idea of ownership referred not to the land itself, but only to the gathering privileges. There was recognition of seasonal ownership of certain fishing sites along the streams, particularly should the occupant make some improvement such as the construction of a dam.

Pomo culture was sufficiently complex to demand the development of specialists for certain tasks. The office was frequently hereditary, though not necessarily according to bonds of consanguinity. There were techniques, songs, and charms to be taught and given by the specialist to his successor.

Stream fishing was a comparatively easy task and one in which anyone might ordinarily take part. Lake fishing, on the contrary, was more difficult, and was carried on by professional fishermen. One or several individuals hired a fisherman to work for them. Each contributed shell money according to his desire or means. The catch of the fisherman was divided among his employers according to the amount of each individual contribution.

Communal deer drives were conducted and, though there was some division of labor, all might take part. The lone still-hunters, who used stuffed deer-head masks and had songs and charms, were highly specialized.

The making of shell money was also a specialty; Gifford¹³ reports likewise for the making of fish and waterfowl nets, and Loeb¹⁴ for the flaking of obsidian.

Peaceful relations generally existed among the various groups about Clear

¹¹ E. W. Gifford, Clear Lake Pomo Society, UC-PAAE 18:333, 340, 342, 343, 1926.

¹² E. W. Gifford, Pomo Lands on Clear Lake, UC-PAAE 20:80, 81, 1923. Also E. M. Loeb, Pomo Folkways, UC-PAAE 19:197, 198, 1926.

¹³ Clear Lake Pomo Society, 328. In this connection it might be mentioned that although Gifford reports that all the men of Shigom fished, particularly in spring, specialists were required to handle the long dip nets from balsas. Greater numbers might participate when fishing was with large gill nets.

¹⁴ *Op. cit.*, 179.

Lake. Group boundaries were well defined but were not rigidly enforced when all were at peace. Various things dictated whether or not boundaries might be disregarded without engendering ill feeling. It was well for the invader to make known the purpose of his trespass, so that his motives might not be misunderstood. Konocti Mountain was the principal source of angelica root, highly prized for ceremonial purposes. On the mountain there were certain patches where anyone might gather without special permission of the Lile'ek, Habenapo, or Limakma; certain patches were reserved. The choicest obsidian was found on the peninsula that extends between East and Lower lakes. The area was open to all, but a declaration of intention to gather the material was considered proper. The source of the highly valued magnesite was a possession of the Koi people. With a special understanding the other Clear Lake groups might go to Koi territory and help themselves. More frequently the Koi people, who were on the ground, picked up the better pieces of magnesite and sold them to the others.

There appears to have been considerable laxity with regard to hunting and gathering privileges away from the inhabited sites, and where there was no established private ownership. There are accounts of Kuhlanapo people going unmolested to gather seeds and dig roots in Boalke territory.

The waters of main Clear Lake were international, although it is true that there was little of value to be found away from the tule and shallow waters along the shore.

To sum it all up, it appears that there was normally enough to permit all to help themselves. Only gross violations of good conduct aroused resentment and necessitated an accounting by the violators.

With more distant peoples the lake Pomo seem to have maintained much the same relations as among themselves. There were frequent visitors to the lake, some of them seasonally, for the purpose of hunting waterfowl and fishing. It was principally through these trips that trading and intermarriage were entered into. Among the Lile'ek, permanent settlement on the shores of the lake resulted.

Of actual combats there were a number. It seems likely that few of these have been forgotten, as warfare is an event to be long remembered. If this is so, the number recorded should be a fair indicator that combat was unusual. In nature the conflicts ranged from massacres by adventurous young men, as in the attack on a seed-gathering party of Kuhlanapo by a party from the Russian River, to the formal battle between the Lile'ek allies and the Habenapo allies over the attempt of the former to divert the course of Kelsey Creek (Hitch-bidame) and so gain control of the important hitch supply. Aside from the massacres the encounters seem to have been rather bloodless. In addition to the above-mentioned conflicts there was one between the combined Big Valley and Shigom and the Northeast or Salt Pomo;¹⁵ two between the people of Elem and the Cache Creek Patwin;¹⁶ between Shigom and Da-

¹⁵ S. A. Barrett, *The Ethnogeography of the Pomo and Neighboring Indians*, UC-PAAE 6:242, 1908.

¹⁶ Gifford, *Pomo Lands on Clear Lake*, *op. cit.*, 80.

noxa and between Shigom and Elem;¹⁷ between the allied Big and Scott's Valley people and the Upper Lake people;¹⁸ between the Kuhlanapo and Habenapo.¹⁹

The Pomo were not great travelers. When parties went to the coast or to Stony Creek they were composed of selected individuals; they numbered only a few, as compared to those who remained at home. Many persons in their whole lifetime never left the bounds of their own communities. Nevertheless, trips were made with some degree of regularity.

In late summer, before the acorn-gathering season, parties went to Bodega Bay for shells. At the same time another party might set out for the Salt Pomo for salt. In late winter, if the acorn store was running short, a party went over the mountains to the Russian River people to trade for a supply. There were local trips for obsidian, magnesite, angelica root, and for red earth for making acorn bread.

The lake people also received visitors regularly. The Matuho, Potter Valley people, came regularly to hunt and fish with the Kaiyao. The Yokaia came each year to fish with the Boalke at Kabel, and packed their fish back across the mountains. The Lile'ek and Tsoiwal were visitors among the Habenapo. The Cache Creek Patwin and the Coyote Valley Miwok came to Lower and East Lakes, and the Long Valley Patwin to Shigom and Upper Lake. The visitors were welcome; some of them, as for example the Matuho and Yokaia, had linguistic affiliations with the people visited.

Sometimes trading with outside groups was incidental to contacts brought about for other reasons; at other times, it was preconceived and regularly carried out. Though pure barter was occasionally practiced, as a general rule the goods to be traded had a set price in clamshell money. The Elem people purchased bows from the Long Valley Patwin; they gave fish and clams.²⁰ The East Lake people were visited yearly by parties from Sherwood, who traded bows and arrows for shell money.²¹ The Geyserville Pomo came annually to Lakopodso, and, under the cottonwood near Kashibadon, sold shell brought from the coast. Iris cord for deer snares was brought from the north.²² The lake region had a surplus of magnesite, fish, furs, and skins, and sometimes acorns. The lake dwellers needed yew bows, shells for making money, seaweed, and salt. In addition to satisfying their own needs they acted as a link in the chain that carried the products of the sea inland and transferred the desired articles of the interior toward the coast.

In the forms taken by their dwelling houses, sweat houses, dance houses, and caches the Clear Lake people showed similarities to the Russian River Pomo and the Patwin;²³ the choice of materials was limited to those provided

¹⁷ Gifford, Clear Lake Pomo Society, *op. cit.*, 342.

¹⁸ Loeb, *op. cit.*, 207.

¹⁹ Kroeber, *op. cit.*, 235.

²⁰ Gifford, Clear Lake Pomo Society, 329.

²¹ Loeb, *op. cit.*, 194.

²² Kroeber, *op. cit.*, 257.

²³ Barrett has exhaustively treated the matter of Pomo buildings in the Holmes Anniversary Volume (Washington, 1916), pp. 1-17.

by the region. The winter dwelling was elliptical in shape, measuring up to twenty-five feet in length. Limber poles were placed in the ground, their tops bound together, and the whole thatched with tule, with one or more doors left in the side. The larger dwellings were occupied by more than one family, each having its own hearth. On the inside the structure was lined with mats, and similar mats served as beds. The summer dwelling was less pretentious; even a brush shelter might suffice. The latter was made by covering with brush a framework made by setting up four or more poles. In the hot, dry summer, the wide-crowned, thickly foliated pepperwood tree offered welcome shade and frequently served as the dwelling. With the many tasks of summer the communal life was broken up; families dwelt alone and frequently shifted their abodes.

The dance house was the semisubterranean structure typical of central California. One surviving excavation measures sixty feet in diameter. The sweat house was similar in plan and construction, but was built on a considerably smaller scale. Some of the surviving excavations measure only eight or ten feet in diameter and are said to have been individually owned. In addition to its smaller size the sweat house lacked the decoration of the dance house.

The acorn cache was similar to that in use among the neighboring Patwin, from whom the idea was probably borrowed. From four to eight posts were set in the ground in a rough rectangle or oval, a few feet apart. Stringers were bound to the posts at a height of from two to three feet above the ground. On the stringers was constructed a floor of fine sticks, and above the latter was erected a dome-shaped framework thatched with tule. The structure possessed no door, ingress being through the openwork thatching.

Lacking personal inclination and climatic necessity, the Pomo found the matter of providing clothing a simple one. The most common outer garment was the shredded tule shirt. It was made of green tule, shredded and braided at one end. The braided ends were tied about the neck; the strings hung to the knees and were belted about the waist. The garment was warm and fairly waterproof. For rough work a similar garment made of the inner bark of black willow or cottonwood was worn. Particularly for women was a rough garment made of panther skin or buckskin.

It was common practice to go barefooted. A buckskin moccasin which came well up the leg was worn in summer as a protection to feet and legs against brush and vines.

The woven rabbitskin blanket was made and used in the area, occasionally as a garment, when it was draped over the shoulder.

The tule boat was a special development of the Clear Lake Pomo. It is called a boat because of its shape, though it depended for its buoyancy upon the specific gravity of the material rather than upon displacement. It was a seaworthy craft, more highly regarded than its dugout successor, though it was short lived, rarely lasting more than a season or two. The making of tule balsas was a task demanding skill and experience, though, so far as learned, anyone might make one. Tule stalks of even size and about twelve feet in

length were bound into bundles about six inches in diameter. A keel was laid and to it ribs were attached. About the framework the bundles were fastened and tightly sewed together, a flat paddle being used to force the binding cords between the tule stalks. Finally a bundle was fastened to the bottom to act as an outside keel and bundles were attached along either side for gun-wales. The boat when made by an expert floated upright on first trial; the less skilled workman found it necessary to add a few stalks to one side or the other before the craft balanced in the water. It seems possible that at an earlier time the inner keel and ribs were not used.

Though the boat was used extensively in fishing and waterfowl hunting and considerably for transportation, still it did not displace walking as the method of travel, even when the destination could be reached by water. Individuals or small groups might travel by balsa, but larger parties generally went by land. For most of the lake communities extensive use of the balsa came seasonally; during the remainder of the year they were landmen. Here again the three southeastern groups differed from the others in that they were island dwellers and so of necessity users of the balsa.

Fish and acorns were the staple foods. Their position was shared in lesser part by the wild oats and other seeds, by edible roots, by game, and by a variety of such things as pepperwood balls, manzanita berries, and pine nuts. It is true that considerable contributions came from waterfowl, clams, clover, tule, and a number of other things, but these were all seasonal and were not stored for the leaner parts of the year.

An examination of the methods of catching and preparing fish reveals almost infinite variety. Stream fishing was in vogue with high water, from February until May. The fish came and went suddenly and no time was to be lost if they were to be taken.

The hitch ascended Kelsey Creek in late April or early May. They went up the stream as far as it was brush lined or to a point near Kelseyville. After the run had ascended the stream, dams were constructed at intervals below. The dams were made tight with willow brush and had wings extending out over the banks. It is said the hitch came in such numbers that they caused a rise in the water level and were carried out upon the banks. The descending fish were scooped out above the dams with closely woven baskets, some twenty inches deep with mouths about two feet in diameter. After preliminary drying on the gravel banks, the hitch were thrust with a flat stick headfirst through the mesh of a willow framework. The latter was round, domed, or flat upright, and covered over with sunflower leaves. When dried in the smoke of a fire, the fish were beheaded and stored in large coarsely woven baskets. Sometimes the fish were roasted close to a flat-bark fire, the bones removed, and the meat dried on trays and stored. By a third method, hitch were baked in pan-shaped pits, some ten inches deep and seven or eight feet wide. Beheaded male fish were placed over heated rocks lining the pit. Then came successive layers of hot rocks, wet weeds and leaves, dirt, sand, and gravel. After cooking overnight, the fish were dried, stored, and consumed bones and all.

For catching the large stream suckers there was a special basket, open at

both ends. The larger end was thrust over the fish; it was secured through the open end. Gill nets were used in the deeper streams. The double-funnel basket trap was set in dams. A bone-tipped spear was used for gigging the larger fish from the banks.

In lake fishing use was made of baskets, gill nets, dip nets, spears; Loeb²⁴ reports the use of hook and line.

A method called padik was used for catching the blackfish, which come near the shore to spawn in May. Gill nets were set in a long row from fifty to eighty yards from the edge of the tule. From the latter point balsas moved slowly lakeward, the occupants beating the water with long, cross-shaped paddles.

The large female sucker (kom) deposits her eggs in holes along the shore south of Shigom. From his balsa the skilled fisherman could plunge his long dip net over the excavation.

For near-shore fish, skilled fishermen moved their balsas slowly shoreward with deeply extended dip nets. The latter possessed a bow, concave outward from the end of the pole, to which was fastened a long sack-like net.

During frosty weather great numbers of small fish congregate in the tule. They were caught in cone-shaped baskets, and were brought to the surface by released tule stalks, pressed down by the wading fisherman. At the same season small fish were taken with gill nets or fine-meshed dip nets where warm springs bubble up in the lake.

In late July and August dead and dying blackfish were gathered, particularly by the Southeastern people. If sufficiently decayed, the fish were stirred into a mush and eaten without cooking.

In spite of the abundance of fish there seems to have been little waste. Any surplus above immediate needs was dried for future use. Suckers, if plentiful, were cut open and dried raw. A supply of blackfish was preserved by salting. Blackfish and sucker eggs were cooked and dried or dried raw. Cakes were made of eggs, pounded and dried raw; they were baked before being eaten.

There were two principal methods of hunting waterfowl: with nets, and with slings. A less important method involved the use of fire at night. Confused by the light the birds were easily dispatched with clubs. By a fourth method waterfowl were snared by small nooses set in the tule.

When waterfowl first appeared with the autumn rains they were considered too "green" to be edible. They were unmolested until they had gathered into flocks and their pinfeathers were developed. The start of the hunting season came in late November and continued until the middle of February, when the birds left the lake for their summer nesting grounds.

Nets were stretched across the low passes followed by the ducks in their morning and evening flights. With a taut line across the top and a slack line across the bottom, the onrushing birds were confined by the folds. When the south wind blew, a net was set at Kabel. The beaters worked the northern end of Upper Lake, sending great numbers of sparrowtails against the wind.

When flocks of waterfowl, particularly mud hens, gathered along the edge

²⁴ *Op. cit.*, 167.

of the tule, they were killed with sling and adobe pellets about an inch in diameter. For geese a larger stone pellet was used.

Snares were attached to slender poles, held down by a trigger over trails followed through the tule by swimming birds. The spring of the pole held the captured bird aloft.

When the heavy rains of late winter roiled the water and impaired the quality of the ducks of Upper Lake, the hunters resorted to the lower end of the lake.

Waterfowl were roasted and eaten immediately. First the bird was plucked, then singed. Then it was roasted until the skin was brown. The skin was removed and eaten, and then the remainder was quartered, roasted, and eaten. When sparrowtails were being prepared, the necks were broken and the severed parts thrust together, causing the blood to clot. This part (balam) was considered the choicest morsel of the roasted bird. Shags, grebes, fish ducks, and small gulls were all considered edible; only the hell-diver was exempt. The feathers of many of the birds were used for decoration and for making mats.

Deer (kanobishe) were taken both by still-hunters and in drives. For a drive a fence was built around a brushy area containing deer, leaving at intervals spaces for the setting of snares. The snares were composed of two parts, the iris rope and loop (sulem), and the sack-like net (uitem). The neck of the net was fastened to the loop, the rope to a springy pole. When the deer struck the net the noose was drawn together.

A net (kilop) was used in taking the rabbit (moiya). The net was twelve to fourteen feet long and eighteen to twenty inches deep. It was set along the trails used by the rabbits when going at dusk for water. The two ends of the net were fastened up; the center was propped up with a loose stick. When the rabbit hit the net, the folds fell about him.

The ghuma or squirrel was shot with the bow, the shot being obtained by deception. The gray tree squirrel (sakalali), driven out by the spring overflow, was taken by shooting. The wood rat was taken by boys for sport, as, generally, were squirrels.

Old people who remained near camp made use of their spare time in capturing the smaller animals and birds. They used the trip noose for taking the cottontail in winter. They baited the mountain robin, the robin, and bluejays with acorns. They trapped the field mouse with the double-hoop snare.

Elks were plentiful in the area but were not often taken. There were only a few bear killers, but spring raids were made on the cubs to obtain their furs for the making of quivers.

The smaller animals and birds were roasted and eaten immediately. An extra supply of venison was dried and stored. It was generally eaten in this state without further cooking. It was excellent as food on journeys, light and nutritious.

Fresh-water clams (xala) were well distributed about the lake. In summer they were taken in some numbers and cooked near the shore. They were placed on the ground in a flat spiral, hinge upward. Over the top a light fire was built with small sticks so that when cooked the shells were easily opened.

The harvesting of vegetable foods extended from the clover and roots of the mountain meadows to the tule along the shore of the lake. In addition there were included acorns, pepperwood balls, and all the great variety of seeds. The methods of harvesting and preparation for consumption in the form of pinole, mush, and the like, have been so frequently and completely gone into that they will not be here repeated.

After this enumeration of activities undertaken in the obtaining of food it might be well to attempt the compilation of a yearly economic cycle, keeping in mind such things as seasonal change in residence, food getting, and trips to points outside the area. The data lend themselves to presentation in tabular form. It should be kept in mind that the table has reference particularly to Upper and Clear lakes. The southeastern groups probably followed a somewhat different schedule of activities.

<i>Season</i>	<i>Activity</i>	<i>Place of abode</i>
Spring:		
March	Stream fishing	Main village
April	Stream fishing (men) Clover (women)	Main village
May	Some clover Lake fishing	Scattered. A large number camped on the lake shore
Summer:		
June	Root digging, tule, clams. Lake fishing in early June	Scattered. Camped on lake; in hills after roots
July	Roots, tule, clams. Carrying in the harvest	Main village
August	Gathering pinole seed. Trips to coast and for salt	Main village
Fall:		
September	Pinole seed Return from trips	Main village and camp
October	Acorns	Camp
November	Continued gathering of acorns and carrying them in Waterfowl in latter part of November	Main village
Winter:		
December	Waterfowl	Main village
January	Waterfowl	Main village
February	Waterfowl until mid-February Stream fishing in latter part of February	Main village

The midwinter months were ones of little activity. Generally there was a sufficient supply of stored food to go with the fresh game. However, there was an occasional famine when the very important acorn crop was a failure. A severe, unseasonal frost is not an impossibility in the lake basin, which has an elevation of fifteen hundred feet. There was a famine about four generations ago; to relieve it parties of men went to the Russian River people to trade for acorns. The lake region offers such variety and such equable seasonal distribution in food resources that it seems impossible that famine should ever have been severe.

TRIBAL GROUPS

Here we shall pass to consideration of the twelve separate village communities, seeking for each an orientation with respect to the matters already discussed.

EASTERN POMO: NORTHERLY GROUP

Shigom.—Shigom territory had a frontage of some eight miles along the narrow lake plain of the eastern shore of Clear Lake. With few recessions along the lake the surface rises quickly, the mountain crest forming the boundary with the Patwin.

There is a dearth of streams and springs; hence there was no stream fishing. The water supply was derived from shallow wells dug along the shore.

The narrow plain supplied the acorns and pepperwood balls, and from the grassy hillside openings came wild oats and other seeds, manzanita berries, and digger-pine nuts.

The main village was Shigom, on the present site of Lucerne. A more recent village, Bududa, appears to have resulted from the breaking up of Shigom.

The Shigom were particular friends of the Big Valley people. They fought with their neighbors to north and south and with the Salt Pomo. They were frequently visited by the Long Valley Patwin. They profess to have had no private ownership of land.

According to Palmer's²⁶ informant, the prewhite population of Shigom was 160, whereas Gifford²⁸ in 1919 reports 235 for about the same period. However, of Gifford's 235, 176 were born in Shigom. If the latter represents the comparable figure, then there is excellent agreement.

Danoxa.—Danoxa (Danoha) territory included the eastern part of Upper Lake, Clover Creek, and an extensive area of mountainous country. The lower valley of perennial Clover Creek (Danoxa-bidame), an oak-covered flat, provided acorns. Upper Lake (Xakor) was formerly a thicket of tule broken by sloughs, excellent for waterfowl. The slough east of Bloody Island is particularly noted for its trout and blackfish. Near Behepal was a bank of red earth used in making acorn bread; this was shared with the Howalek, the particular friends of the Danoxa.

Three village sites are recognized. Danoxa, sheltered by the hills in the river valley, was the earliest and largest. Cosmopolitan Behepal was most recently occupied. Badon-napoti (Bloody Island) was occupied at the time of the Bloody Island massacre.

Palmer's²⁷ population figure for Danoxa is 100.

Howalek.—The land of the Howalek followed Middle Creek drainage north from the marshy shores of Upper Lake to the high mountainous divide with Eel River and the Yuki.

About the head of the lake (Kaikaiyao), with its sloughs and tule, was excellent waterfowl hunting and fishing. From fall camps far up the valley were gathered acorns, pepperwood balls, wild grapes, and pine nuts. On the moun-

²⁶ *Op. cit.*, 34 ff.

²⁸ Clear Lake Pomo Society, 388.

²⁷ *Op. cit.*, 34.

tainside to the east is a little supernatural lake (Tuluha) where the Howalek went to be spiritually purified.

As among the Danoxa, community ownership of land was practiced. Chieftainship was hereditary, passing from father to son.

Howalek, also called Titsmagi (root bridge), the only known village site, lay on the western bank of Middle Creek, against the mountain wall. Summer habitations were in the valley flat between Clover and Middle creeks.

Palmer's²⁸ population figure for the Howalek is 120.

Yobotui.—Although the identity of this group has been recognized by other investigators, it was only by the process of elimination that the writer was able to determine the extent of its area. Informants belonging to other groups knew the location of camping, fishing, and village sites, but were indefinite on boundaries.

The narrow, marshy, indented lake shore provided tule, waterfowl, and fish in unexcelled abundance, and bottleneck entrances to little bays made ideal sites for the setting of waterfowl nets. Parallel to the shore is a narrow bench. This provided oaks and acorns, seeds, clover, and the site of the main village, Yobotui. There are at least ten old hunting and fishing sites along the shore from Yobotui to Kabel. Several fish dams were maintained on lower Scott's Creek.

The affiliations of the Yobotui seem always to have been with the Howalek and Danoxa, rather than with the Big Valley groups.²⁹ Palmer³⁰ places their former number at 150.

NORTHERN POMO

Kaiyao (Mayi).—Lacking frontage on the main lake, the Kaiyao found all their resources around Tule Lake and in Bachelor Valley. They set waterfowl nets near their village, and with nets and baskets scooped out suckers, perch, and blackfish from the receding waters of Tule Lake in late summer. From early-summer camps along its shores they obtained the edible tule; from the valley flat, acorns; and from the mountains to the west, acorns, pine nuts, and seeds. To the north the mouth of Daile Creek Canyon (Tsiyahabeo) was never passed, for it was inhabited by a monster.

Through the Blue Lakes gap, from Cold Creek Valley, which drains to the northwest, came the Matuho, to dance and fish. The catch was carried home in conical baskets.

The two principal village sites, Mayi and Kaiyao, are situated at some distance from the lake on high ground, above the spring floods of the flat. The former site is the older and has long been unoccupied.

Palmer's population figure for the Kaiyao is 120.³¹

Boalke and Komli.—This group held Scott's Valley (Yima) from Eight-mile Valley (Komli) to Tule Lake, and, across a low range of hills, a stretch

²⁸ *Ibid.*, 34.

²⁹ This is indicated in the account of the war between the Upper Lake people and the Scott's Valley allies. Loeb, Pomo Folkways, 207.

³⁰ *Op. cit.*, 34.

³¹ *Ibid.*, 34.

of the main lake from Gubi, near Lakeport, to Kabel or Rocky Point. This latter they held by permission of their good friends, the Kuhlanapo.

The winter villages were in Scott's Valley; they were also occupied in late summer, during the acorn harvest. Scott's Valley Creek (Yima-bidame), high in the spring and reduced to isolated pools in late summer, yielded fish at both seasons.

In December and January, parties took suckers with the open-end basket from Datsim, a little stream entering the lake south of Kabel. In summer, the whole tribe camped along the lake shore. In the near vicinity they got fish, clams, tule, clover, roots, and seeds.

The Komli, late-comers from the Russian River, occupied the southern part of the valley on sufferance of the Boalke, and had their own chief. Feeling seems to have been of the best, with only slight suggestion of a territorial division of utilization.

Annually, the Yokaia crossed the mountains to fish in places assigned by the Boalke. Sometimes the Boalke went to the Yokaia in winter for acorns.

The Boalke recognized private ownership of certain oaks and pepperwoods but practiced communal ownership of land.

Among the important summer camps on the lake shore were Kabel, Xabi, and Katsmugal. Significant winter villages in Scott's Valley were Noboral and Karaka. Barrett³² mentions Samakahna and others. In recent times there was but one significant winter settlement, known to the other groups as Yima and occupied by both Boalke and Komli.

Palmer³³ gives 180 for the Boalke population and 90 for the Komli.

EASTERN POMO: SOUTHERLY GROUP

Kuhlanapo.—This group held Big Valley from Adobe Creek (Xalebim-bidame) to the present site of Lakeport. Although it was also a boundary, Adobe Creek as the principal source of spring fish seems to have been a Kuhlanapo stream.

The lake shore supplied tule, clams, fish, and waterfowl. From the oaks of the valley came acorns, and its brushy patches offered excellent shelter to deer. From spring and summer camps in the higher country of the upper valley came clover, seeds, and roots.

Unseparated by any striking natural boundary or contrast in habitat, the Kuhlanapo or "water-lily people" shared Big Valley with the Habenapo or "rock people." In contradistinction to general practice in the area, these two communities possessed recognized group names as distinct from village-site names. They are suggestive of the moiety names in use among other California tribes.

Although a number of village and camp sites are given, it appears that there was always one main village where the dance house was situated. Boomli, Kashibadon, and Xadabutun appear to be important. Recently a site on the

³² Ethnogeography, 156.

³³ *Op. cit.*, 34.

west bank of Cole Creek and bearing the stream's name, Chuwish-bidame, was the central village.

Although the Big Valley groups seem to have been the largest, no superior habitat resources justify Palmer's³⁴ figure of 500 for the Kuhlanapo. It may be significant that Palmer's informant was a member of this community.

Habenapo.—The territory of this group centered about Kelsey Creek (Hitch-bidame), reaching southward to Cobb Mountain, there adjoining the Lake Miwok and Wappo.

Peculiar to the area were the hitch, small fish ascending Kelsey Creek. From the side of Dadano came red earth for acorn bread.

Though mutually respecting boundaries, Habenapo and Kuhlanapo were friends and allies. Parties of Wappo and Miwok came to fish. A group of the former, the Lile'ek, residing in eastern Habenapo territory, sought to divert the hitch from Kelsey Creek to Cold Creek. In the ensuing battle the Lile'ek were defeated.

There was private ownership of certain trees and seed patches. Hereditary chieftainship favored matrilineal descent.

Among the most important village sites were Nonapoti and later Bidame-wina. Other significant sites were Shabegok and Sedileo.

Palmer's informant gave the Habenapo 300.³⁵ Again, this seems somewhat high in comparison with his other figures.

YUKIAN WAPPO

Lile'ek.—This Wappo community came as visitors, remaining until defeated in a battle with the Habenapo. They held the lower valley of Cold Creek and the western slope of Konocti, with lake frontage on Soda Bay.

The stream provided good fishing in spring, and a perennial pond (Shigasho) midway in its course was fished in late summer. The side of Konocti was particularly good for deer and rabbits.

It is said that the Lile'ek had a headman but no chief. In their battle with the Habenapo they were assisted by the Southeastern Pomo.

Two villages are known for the Lile'ek: Daladano and Kabetsawam.

Palmer's figure for the Lile'ek is 100.³⁶

SOUTHEASTERN OR LOWER LAKE POMO

Kamdor.—Among the tribes to the west this island community is known as Limakma-badon. They held the shore of Lower Lake to Konocti Landing, a strip separating the Shigom and Elem communities, and shared hunting rights on the peninsula separating Lower and East lakes.

Kamdor was particularly rich in resources associated with the water. Only in this area is found the goggle-eye perch (deta), taken in May and June with deeply set nets.

The three southeastern communities were friendly with one another, spoke a common language, and shared the institution of private ownership of land. They were on good terms with the Cache Creek Patwin and Lake Miwok.

³⁴ *Ibid.*, 34.

³⁵ *Ibid.*, 34.

³⁶ *Ibid.*, 34.

Besides the main village on the island, Kamdot, there was a minor village on the mainland to the north, Patolkaleo (so called by the Big Valley people). Their island position made them constant users of boats.

For this group Palmer's informant estimated 140.³⁷

Elem.—This group, called Kaogoma by the Big Valley people, had their main village on the island, Elem. An overflow village on the adjacent mainland became the main settlement in more recent years. They possessed a special resource in the obsidian found near Big Borax Lake, which, according to Gifford,³⁸ they owned.

Palmer's estimate for Elem is 130.³⁹

Koi.—The island community, Koi, was called Shaotanomanok by the Big Valley people. To the east the flat mainland was the gathering ground for acorns, manzanita berries, and pine nuts. West of the island were the mountainous hunting grounds, while the tule-choked end of Lower Lake supplied unexcelled waterfowl hunting.

A special resource was the magnesite deposit situated in the southeastern part of the Koi area.

According to Palmer, the island once constituted their only village and their numbers were 120.⁴⁰ At least in later times there was another village on the mainland to the east, and several villages or camp sites along the shore to the northward.

CONCLUSION

From an examination of the evidence here submitted there are possible a number of summations and generalizations:

A very evident line of cleavage separates the three Southeastern groups from the rest of the lake peoples. This was partly conditioned by matters of physical geography, but in many points of differentiation there is no tangible connection with the *milieu*. The three groups were true lake dwellers, had their principal villages on islands, were constant users of the balsa, and were lake rather than stream fishermen. They had private ownership of land and spoke a distinct dialect which shows a strong Patwin influence. For the other groups we might say that they dwelt on the lake only part of the year, had their villages inland on high ground near a stream, made extensive use of the balsa only seasonally, and that for them stream fishing was as significant as lake fishing. They practiced communal ownership of land although they recognized private ownership for certain gathering privileges.

Each community with the exception of the Kaiyao held frontage on the lake, and the Kaiyao had in Tule Lake what is really an extension of the main lake. This they used for hunting, fishing, and gathering when the streams were low in summer.

All demonstrated their adaptability to the environment by the making of the balsa and the extensive use of the available resources: tule, fish, and waterfowl. They demonstrated their independence of environment by trading and by long trips for the things their region did not offer.

³⁷ *Ibid.*, 34.

³⁸ Pomo Lands on Clear Lake, 87.

³⁹ *Op. cit.*, 34.

⁴⁰ *Ibid.*, 34.

Among the twelve groups there was generally a feeling of peace and amity, a willingness to share what the country provided, and in ordinary times a polite disregard of boundaries.

If we accept Palmer's figures, we have a total of 2210 for the twelve groups. Certainly the country should have supported this many, at least if utilized to the maximum. However, we do not get the impression of maximum utilization, but rather one of easy plenty with time for diversion. It was a fair country and it attracted others who came freely to fish or, if they wished, settled permanently without any hardships accruing to the others. Rarely did the lake people find it necessary to leave their own country to obtain the necessities of life.

RUSSIAN RIVER

THE SITE OF KACHA

THE KACHA-POMA of Redwood Valley have been chosen as a typical Russian River Pomo group.

Their habitat, Redwood Valley, lies just off the main line of travel, at the extreme head of the Russian River. The valley is not large, being only some four miles long by two miles wide. The main axis trends north and south and the valley floor is encompassed on three sides by mountains.

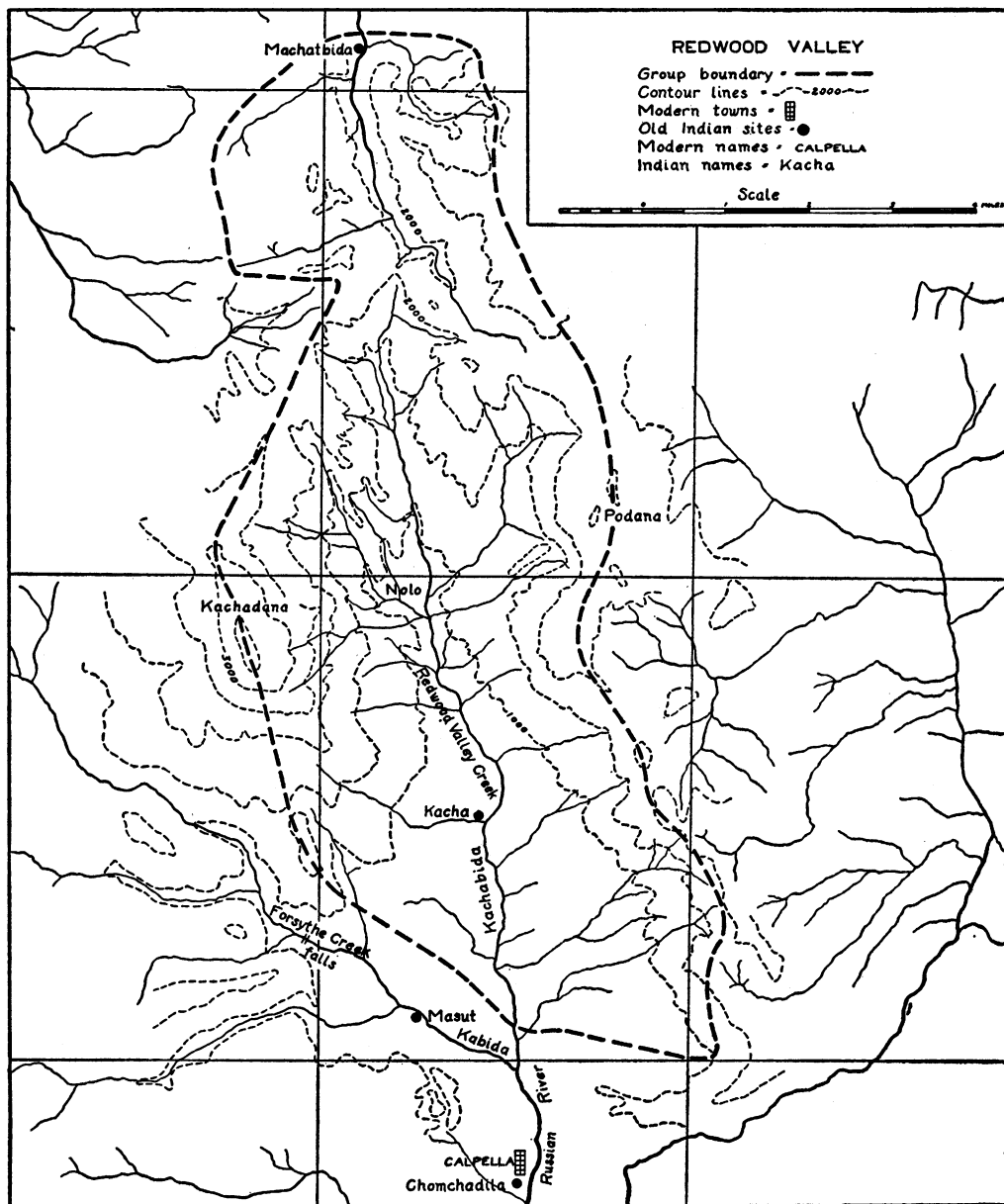
The line of contact between hill and valley, though not abrupt, is distinguishable. Terraces, river formed, mark the descent to the present stream level with its small flood plain. In the upper part of the valley the stream channel exposes rocks *in situ*, but this is not characteristic of the area, even on the hillsides. The hills are gentle and rolling; nowhere does the surface offer serious obstacles to the pedestrian.

The region has rather hot, dry summers and cool, rainy winters. Winter snows are infrequent but frost is common. As a result of these conditions, stream beds are generally dry in summer and may hold raging torrents in winter. On the mountainside west of the valley is found an abundance of springs, but on the eastern side of the valley they are lacking.

The vegetational covering has experienced great changes. Certainly the chaparral thickets of manzanita, madroña, scrub oak, and buckbrush which now characterize many sections of the valley were formerly restricted to the higher slopes and ridges of the mountains. A beautiful park landscape, largely of oaks, was maintained by annual burnings, done "when the straw was dry." In this manner the brush was held down; the larger trees were uninjured. The tanbark oak, the acorns of which were very much prized by the Indians, and which was found quite abundantly far up the mountain to the west of the valley, has almost disappeared through commercial exploitation.

The main stream was sparsely lined with willow. Across the valley floor was a park landscape dominated by valley oak and live oak and including in lesser numbers black oak, maul oak, and Oregon oak. Beneath the trees was a heavy growth of grass, wild oats, wild rye, and, particularly in the lower levels, various clovers. Where the valley steepens at its northern end were yellow pine, Douglas fir, and a few sequoias. The park landscape continued up both mountain slopes at the sides of the valley with an almost solid undergrowth of wild oats. Extensive grassy openings characterized the slopes, particularly the one to the east of the valley. An association of live oak, black oak, and Oregon oak graded with altitude into a chaparral composed mainly of scrub oak, manzanita, buckbrush, and chamise, with frequent additions of madroña, Christmas berry, and the like.⁴¹ Far up on the western valley flank the tan oak became prominent, and with it were the yellow pine and Douglas fir. The

⁴¹ The common names here applied to the plant and tree forms are the same as those used by Jepson in his *Flora of Western Middle California*, where they may be readily identified with the scientific names.



Map 2. Pomo of Redwood Valley, Russian River.

mountain to the east showed fewer species and numbers of trees, with chaparral assuming greater prominence. Besides the species enumerated, there were great numbers of trees, shrubs, and grasses whose economic significance far exceeded their prominence in the landscape.

Deer were abundant and elk were present. Bears were frequently encountered. Squirrels followed the oak. Valley and mountain quail, doves, and

what we generally consider to be nongame birds were well represented. A wide variety of fish headed by the salmon was found in the streams of winter.

This, then, is the site: a land of abundant resource, floral and faunal; with a climate mild enough not to be rigidly exacting, yet severe enough to demand some preparation for winter.

THE UTILIZATION OF THE SITE

In site and nature of their culture⁴³ the Kacha-poma were a typical "tribe" of the Northern Pomo. The valley of Kacha-bida they held as their own. The boundaries on east, west, and north were the crests of the mountains. Where Forsythe Creek or Ka-bida branches off to the west was their southern boundary. They held fishing rights at the falls on Forsythe Creek. They fished on Machat-bida, which is a branch of Outlet Creek draining to Eel River and some distance removed from their valley.

The village of Kacha lay on the river terrace near the center of the valley. The focus was the "sweat house," really assembly house, a great round structure, forty feet in diameter, sunk into the ground to a depth of three feet. Arranged about the sweat house in a rough circle were the dome-shaped dwelling houses, some twelve in number. These were constructed of bunches of wild rye or brome grass and were lined inside with bark so that they were water- and windtight. About each house were one or more large, deep, round storage baskets. When filled, they were roofed with cone-shaped covers, made steep to shed the rain.

There must have been about 125 people in the valley and they all lived in the one village. They had an elected chieftain, who might be succeeded in office by some close relative, but not necessarily so. The chief was a trusted adviser and leader. He took the initiative in contacts with other groups. These were generally quite friendly, as all the people about spoke the same language and observed the established boundaries and privileges. Of course some neighboring Indian might disguise himself as a bear and steal a few manzanita berries, but this did not happen frequently; there was an abundance of food, it was not necessary to quarrel over the matter. Of greater concern were the activities of young hotbloods, eager for excitement.

To the south of the Kacha-poma were the Masut-poma and the Chomchadilapoma, who together formed a "tribe." The Kacha-poma shared fishing privileges in Masut territory on Forsythe Creek, or Ka-bida, and gathering privileges were occasionally exchanged.

The Kacha people knew something of the groups to the west, for they made regular trips to the coast, sometimes as far south as Bodega Head. They knew something of the people to the north, for the Yuki of Round Valley, or south thereof, made periodic trading trips to the Russian River.

Several trails led from Redwood Valley to lower and upper Potter Valley

⁴³ Particularly in the sections dealing with the gathering and preparation of native foods the writer has checked his field data and to some degree added to them by frequently consulting V. K. Chesnut, *Plants Used by the Indians of Mendocino County, California*, National Herbarium Contributions, 7:311, 1902.

and visiting was common. The country of the Pomo of Potter Valley was the source of obsidian for the Kacha-poma.

Visiting was done principally in summer, for even the moderately cold winters of this area were severe enough for people as poorly clothed as were the Kacha-poma. However, the region supplies such an abundance of food that with storage of a supply of acorns, roots, and other edible things in the fall there was little necessity for getting out during December and January. There is an occasional fall of snow, though not enough for the use of snowshoes. The men even traversed the hillsides previous to the winter months and collected great quantities of dry wood. Thus, with the exception of a little hunting for fresh meat and some wood gathering, these two months became a "lying in" time, a period for eating, sleeping, storytelling, and preparing for the outdoor season. Those most skilled made bows, arrows, beads, or obsidian points, and sold or traded them to the less accomplished. The making of these articles was not considered a hereditary trade, though a son or nephew might become skilled through association with the craftsman. Nets, spears, traps, and other fishing paraphernalia were made; both men and women made baskets.

By February the Eel had assumed the proportions of a river and the salmon were running. Parties of the Kacha-poma went over the divide and established a camp at Machat-bida. Salmon were speared with the long, pronged, bone-tipped spears; they were netted with the Indian hemp nets. These methods of taking the fish were particularly effective when the water was high and swift. Most of the early-caught fish were eaten fresh; later they were split, dried, and stored in baskets.

A little later in the season, salmon and other fish came up the Russian River, and then parties went up to the falls of Ka-bida and fished with the Masut people. Below the falls the fish collected in great numbers and were easily taken. Even Kacha-bida had fish at this time of the year. Trout, perch, salmon, and hardmouth were taken by various methods, depending on their abundance and the state of the water. Near the site of Kacha a dam was built by setting posts in the bottom and filling behind them with brush, rocks, and dirt, and then setting cone-shaped fish baskets of hazelnut wands between the posts. The open mouths were pointed downstream and the ascending fish were caught. If fish were not abundant enough at the dam, a long, heavy, willow rope was made and used as a drag. It was placed in the water near the mouth of Ka-bida and dragged slowly upstream. In June, when the stream was very low, fish were taken by poisoning. The crushed bulbs of the soaproot were thrown above the weir and stirred well into the water. The poison filtered through and was carried down the stream, along the banks of which the villagers were stationed. The stupefied fish, floating to the top, were scooped up with shallow baskets. When most of the stream bed was dry there remained pools in the canyon toward Machat-bida. Here fish were taken in wire-grass baskets. The fisherman jumped into the pool and attempted with his basket to pin the fish against the rocky wall. It was a test of skill and was considered good sport.

The larger fish were split, dried, and stored, the smaller ones eaten immediately. A favorite way of cooking was to bake them overnight in the shallow, rock-lined oven. Prepared this way, the fish would keep for some time before spoiling.

Deer were abundant over all the valley, but the best place to get them was at the north end on the flat of Nolo. They were shot with the bow, snared, or corraled. A snare, in order to be effective, had to be placed over a much used deer trail or over a narrow passage through which the deer could be driven. The corrals were erected only about spots where the deer were known to feed or congregate.⁴⁸

The spring-killed deer were generally eaten fresh, for it was always possible to get other fresh meat at this time of year. In the valley the gray squirrel, ground squirrel, quail, dove, rabbit could be taken. For small game it was not necessary to waste an obsidian-tipped arrow; one with a foreshaft of red-berry would do. This meat was always eaten fresh, generally roasted. Up the slope of Po-dana to the east or up Kacha-dana to the west were found the wildcat, raccoon, panther, and bear. They were all taken and eaten, but were not so abundant or easy to take as other game.

As spring advanced, it was good again to have fresh plant food. In April was celebrated the appearance of green clover. The tender leaves and shoots, and later the blossoms, were eaten raw and in great abundance. As a concomitant, were cakes made of pepperwood balls, good tasting and a preventive of ill effects from eating too much clover. The best places for gathering clover were on Nolo Flat and in the valley about the village. It was carried to the village and kept fresh by being placed on the cool grass and covered with a blanket.

The wild parsnip was found on the bare hillsides, the wild onion in the valley. Both were eaten raw, but sometimes the parsnip was baked under ashes.

In late spring and early summer, when the wild oats ripened, the women went out with their seed beaters and baskets and gathered the oats in great quantities. The grass was widely distributed, but the best and purest stands were found on the hilly slopes, particularly on the side of Po-dana to the east. The seeds were carried back to the village and made into pinole by singeing, parching, and grinding.

With the first good weather of early spring, a party composed of men and young women, strong and able to carry a load, walked over the mountains to the coast for seaweed. They took two days to make the trip, stopping the first night in the vicinity of Orr's Springs. For food they carried acorn "bread," pinole, and unleached meal. No pay was asked for the seaweed which they gathered and took home. It was excellent when baked; and large quantities were dried and eaten raw, its salty taste making it very palatable.

Early and middle summer were times for traveling, for feasting and dancing, for running footraces, and for visiting with neighbors. A party went over

⁴⁸ Andjowe's mother's brother owned a salt spring and had a corral erected about it. If the white men had not come and disrupted the old order of things, Andjowe would have learned the hunting songs and inherited the spring at his uncle's death.

to Potter Valley to the friendly Pomo and obtained obsidian without cost. Parties came down from the Eel River and Round Valley with fine, long, sinew-backed yew bows for sale, made by the northerners especially to meet the taste of the Russian River people. These were war bows or for use in the hunting of large game. Occasionally, at this time of year, a trip was made to Bodega Bay to obtain clamshells from which to make money. Sometimes it was necessary to give the coast people something for the shells.

In July came the beginning of the great harvest which extended throughout the fall months. The first of the important crops was the manzanita berry. Some of the manzanitas of the valley assume a form quite tree-like in size. These were privately owned and the berries were gathered by the owners. The manzanitas of the hillsides, so conspicuous in the chaparral, were communal property. Some of the berries were picked green, ripened in trays, and eaten raw, or ground and made into pinole, bread, and mush. More were gathered and stored for winter use, and others were made into the familiar unfermented cider.

Native tobacco was gathered along the dry stream beds, pepperwood balls on the benches, wild grapes from the vines which cling to the oaks. The tobacco was dried and made strong and sticky with ashes before being smoked in ash pipes. The husk of the pepperwood ball was eaten raw; the meat was pounded and made into cakes. Wild grapes were eaten raw, as were strawberries, raspberries, thimbleberries, and blackberries.

In the fall another trip was made to the coast. This time they got mussels, abalone, and kelp. The last-named was dried and enjoyed for its salty flavor.

Squaw root was dug in the low valley, wild potatoes (various *liliaceae*) around the springs on the side of Kacha-dana, by men and strong women. For digging sticks they used mountain mahogany or saplings of post oak. When the fall rains came and the grass began to show a green color, no more roots were dug; it was a taboo religiously observed. The squaw root and some of the "potatoes" were dried and preserved to be eaten raw, and others were baked in a pit overnight, becoming sweet and delicious.

In the valley the women industriously gathered the seed of all the various *compositae*. The seeds were kept separate, and when used were carefully mixed so as to bring out some desired flavor. They were sifted, parched, and ground into meal, though sometimes the men stamped out some seeds and ate them raw.

Buckeyes were gathered in the canyon toward Machat-bida, and were baked, leached, and eaten with salty kelp or seaweed. They do not keep well, so were not stored for winter use. Also in the canyon were found hazelnuts, and these were kept all winter. The Christmas berries of the hilltops were boiled and roasted as well as eaten fresh. Far up Kacha-dana was the digger pine, whose nuts supplied a good part of the fall diet.

But the most significant crop of all was that of the oak. Acorn gathering lasted until late November. That the gathering might be easier, all the dry weeds and brush were annually burned after the seed gathering was over, so that there remained no underbrush in the valley or on the lower hillsides.

Like larger manzanitas, all the great oaks of the valley flat were privately owned; those of the hills were owned by the village as a whole. The acorns most prized, those of the tan oak, were found only far up on Kacha-dana, but no trip was too long to make for these highly desired nuts.

Both men and women worked at acorn gathering. The nuts were carried back to the village. Some of them were shelled, pounded, leached, and stored as meal; others were shelled and stored; yet others were stored whole. Each kind of nut was kept separate, as each had its particular use.

The acorns of the tsupa-kale⁴⁴ or valley oak were used for making bread; they were also baked in the shells and eaten without leaching. The gucha or mau-oak acorns were used for both bread and mush, as were those of the wiyu-kale (probably a variety of Oregon oak), the wuchesh-kale or tan oak, wichi-kale or black oak, and the shatcham or live oak. The kakul or Oregon-oak acorns were used in making a heavy, dark bread. These acorns were not leached, but the bread was always colored by adding some dissolved red soil, as was frequently done with the other acorns.

In the event of a shortage of manzanita berries or acorns, a trade was frequently arranged with neighbors. This was sometimes a real trade; or it might be simply an invitation to invade temporarily another's gathering ground. In times of need the cache of the ground squirrel was sought out, for he was generally well provided.

Besides these staples, occasionally other foods were eaten which were a welcome supplement to the diet. Excellent eating clay was found up Tehadal-koko or Ackerman Creek. There were years when the caterpillars were abundant, or when grasshoppers were numerous. All helped to piece out the manzanita berries, the acorns, deermeat, and salmon.

Fall meant an abundance for both man and animal. The deer grew fat and tame on the acorns. They fell an easy prey to hunters and many were killed to be cut into strips, dried, and stored in the great baskets.

But besides food, fall was a gathering time for many other things. It was necessary to assemble the materials essential to the manufacture of tools, utensils, and weapons.

For the making of arrowshafts they used dogwood, which was found in the upper canyons. In the same locality they got the *Calycanthus*, most highly prized of all for arrow main shafts. The scrubby, white-leaved willow they found along the stream. The groundsel tree (*Baccharis consanguinea*) was widely distributed, as was the redberry, valuable for foreshafts.

For bows they sought out wild nutmeg and dogwood; even buckbrush was used. For baskets they gathered skunkbush from the hills, willow, hazelbrush, dogwood, and the roots of the pine. Indian hemp provided twine. Soaproot, with its many uses, was found along the stream. Elder served for the making of whistles and flutes, buckeye for fire drills.

⁴⁴ Rather than names for the various species of oaks the Kacha-poma have names for the acorns, the trees being designated by adding the suffix "kale." The live oak is the only exception to this rule: there is a word "shatcham" meaning "live oak," and a word "witchi" meaning the "live-oak acorn."

December came, and with it cold and disagreeable rains. But that did not matter. The big storage baskets were filled and roofed over; the little baskets inside the house were filled; there was dry manzanita for the fire. The men went to the assembly house and there they sweated, smoked, and told bear stories. They rested after the season's activities and then prepared for another year.

COAST POMO

MOST OF THE surviving Gualala or Southwestern Pomo,⁴⁵ about 100 in number, dwell in a little settlement situated four miles east of Stewart's Point, Sonoma County, California.

THE SETTING

The country formerly inhabited by the Southwestern Pomo forms a narrow coastal strip lying between the Russian and Gualala rivers, and extending inland to Austin Creek, a north-bank tributary of the Russian River.

The area lies within the physiographic region known as the Mendocino Plateau. The eastern side of the plateau is marked by a steep ascent; from Austin Creek, with an elevation of about 500 feet, the eastern wall rises to around 1500 feet. The general slope of the plateau is to the westward; its seaward margin has an elevation of about 500 feet. The drop to the sea is broken by a narrow terrace averaging 100 feet in elevation. Another precipitous drop carries the profile to the sea. The width of the terrace varies from a half-mile to a mile through most of the area. South of Fort Ross the terrace ends, so that the western edge of the plateau meets the Pacific with a wall.

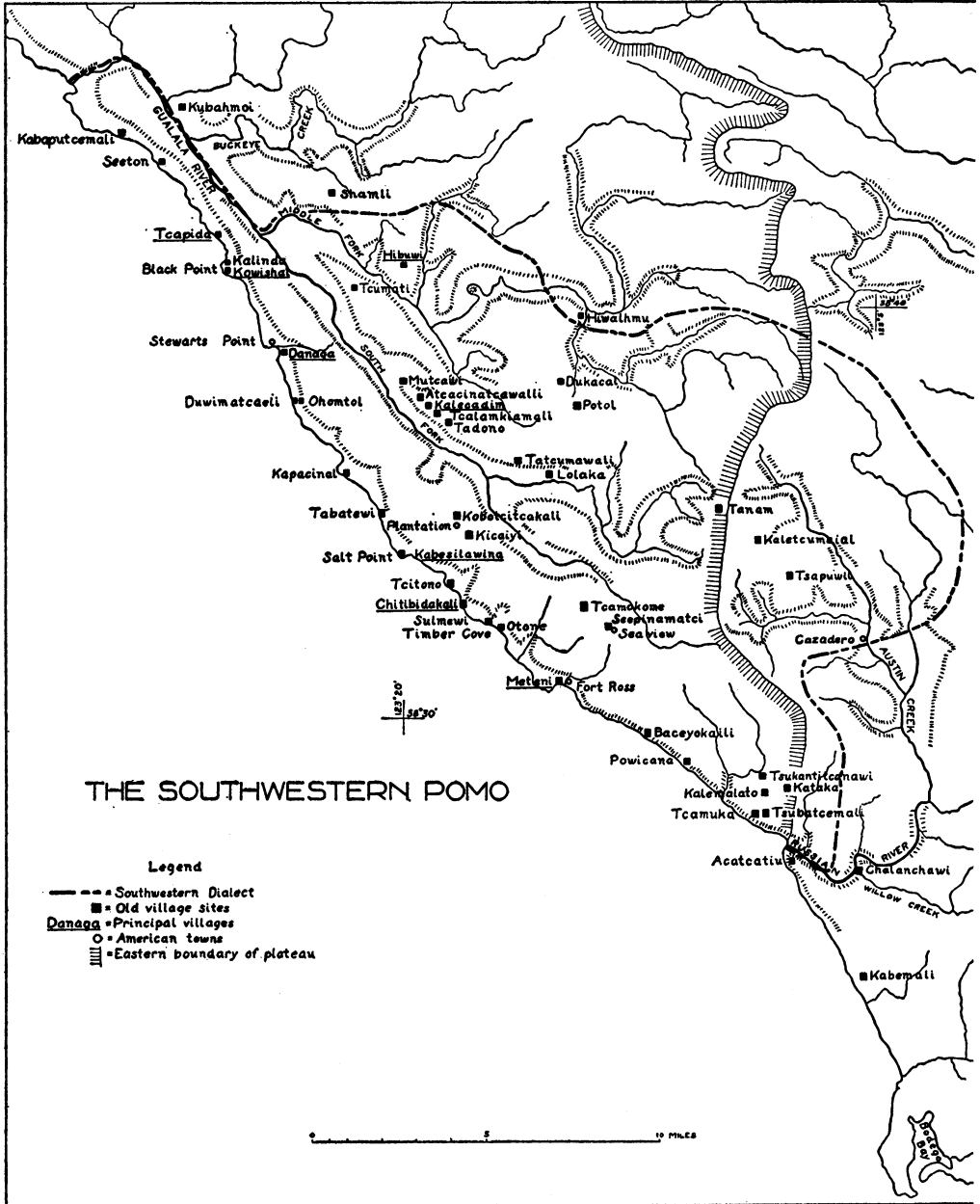
The drainage pattern is complicated by the peculiar course of the south fork of the Gualala. The stream runs parallel to the coast for a distance of twenty-five miles, never more than five miles from the sea. From its eastern escarpment the plateau drains westward by short transverse streams to the south fork. Westward from the latter, short streams plunge through precipitous gorges to the sea.

The plateau is submaturely dissected. Stream valleys are deeply cut; in most of them the valley walls flare, so that the flat remnants of the old plateau surface are found only here and there on the crests of the stream divides. Though the relief is such as to offer problems to the builder of modern roads, it is not abrupt enough to trouble seriously the foot traveler or horseman.

Tempered by its proximity to the sea, the climate of the area is remarkably equable. The mean annual range of temperature does not exceed ten degrees; even the extremes rarely approach freezing or excessive heat. The average for the year is probably in the neighborhood of 55° F. Of utmost significance in retarding the upward trend of summer temperatures are the coastal fogs, prevalent from June through August. They extend upward to elevations of 1500 feet, and reach inland, occasionally as far as the Russian River, thus effectively covering the area under discussion.

It is a region of heavy precipitation—from forty to fifty inches—markedly concentrated in the winter months. The summer months may be rainless for a given year, though the average for many years shows at least a slight amount for every month. The rain-bringing storms are likely to last some time, with several days of drizzling rain, leaden skies, and low-lying clouds. At least on the higher elevations snow is not at all unknown, but it is of such small amount and short duration as to be hardly significant. In spite of the dryness

⁴⁵ The modern settlement is called Kashia (*kashaiya*). The Indians dwelling there state that this is a general name for the Coast Pomo, though they do not know what it means.



Map 3. Southwestern Pomo of the coast.

of summer the ameliorating influence of the fogs is such that even small streams are in the main perennial, and springs can be depended upon—at least until late summer.

The region forms part of the great California redwood belt which stretches for several hundred miles along the humid coast of the northern part of the

state. Though redwood is the dominant tree, associated with it are Douglas fir, black, live, and tan oaks, the pepperwood tree, and madroña.⁴⁶ Redwood forms pure stands on flats and river benches; but on the margin of the plateau it is replaced by Bishop pine.⁴⁷ The narrow coastal terrace is nearly treeless; only here and there is a gnarled and stunted pine.

Tan oak formerly occurred in some abundance on the "bald hills" that lie near the eastern edge of the plateau. Associated with tan oak are the Oregon or post oak⁴⁸ and madroña. On the moister slopes Douglas fir is found in fair amounts, intermingled with redwoods. Where the redwood stand is dense, deep shade prevents heavy undergrowth.

In the deep valleys along the perennial streams, on the well-protected north slopes, tree growth is heavy. On the higher slopes with southerly exposures there are numerous and good-sized natural openings where the vegetation cover is grass and shrubs rather than trees. Though manzanita⁴⁹ is fairly abundant in the area, patches of true chaparral rather uncommon. The treeless openings were formerly covered with wild oats and clover, now rapidly disappearing in the normal plant succession of an overgrazed country. Small fruit-bearing plants are relatively scarce.

The vegetational cover of the narrow coastal terrace is largely composed of grass and small shrubs. Here and there, where the plateau cliff meets the terrace, are small moist depressions; about these grow the so-called wild onions, wild potatoes, and wild celery. Kelp and seaweed are abundant in the neighboring waters and are frequently washed up on the beaches.

The redwood belt does not provide a favorable environment for an abundant fauna. The white-tailed deer is native to this region, as are the gray fox, chipmunk, brush rabbit, weasel, and flying squirrel. Quail are fairly abundant, finding favorable conditions in the forest openings and along the treeless terrace.

With the heavy rains of winter the major streams are open to the sea so that salmon ascend the Gualala and Russian rivers and minor tributaries of these streams. Even during the low water of summer there are trout in the perennial streams. The immediate coastal waters of the Pacific abound in sea bass and perch. Seals are found along the California coast—although, according to reports, they were never abundant in the stretch between the Russian and Gualala rivers. Abalones and mussels are found attached to the rocks of the headlands, and clams are found embedded in the sandy beach exposed at low tide.

The region is not a favored one for occupancy by a people of primitive culture. Even the modern white occupants have largely restricted their utilization to an exploitation of the timber and grazing. In no single resource available to Pomo culture did the region provide abundantly. Acorn-bearing oaks were definitely restricted, as were the patches of wild oats, roots, and berries. Deer were fairly abundant, but other game was relatively scarce. The

⁴⁶ Respectively: *Sequoia sempervirens*, *Pseudotsuga taxifolia*, *Quercus kelloggii*, *Quercus agrifolia*, *Pasania densiflora*, *Umbellularia californica*, *Arbutus menziesii*.

⁴⁷ *Pinus muricata*.

⁴⁸ *Quercus garryana*.

⁴⁹ *Arctostaphylos manzanita* ?

region is near the southern extremity of the salmon area. Nature was not prodigal in its provision and the Pomo have necessarily to scour the country to provide their livelihood from a variety of sources.

THE CULTURAL LANDSCAPE

The exact boundaries of the area held by the Gualala Pomo cannot be defined. The statements of the surviving members of this group indicate boundaries at variance with those shown by Kroeber⁵⁰ and by Barrett⁵¹—though Barrett's text contains support in favor of the included map. As indicated on that map, Gualala territory extended only to the Russian River on the south. From a point on the Russian River lying a short distance below the mouth of Willow Creek, the boundary turned northeastward to a point on Austin Creek near the present town of Cazadero. From there it turned northward, including most of the drainage basin of Austin Creek. From the divide north of Austin Creek the boundary turned to the west so as to include most of the middle fork of the Gualala. The lower course of the Gualala marked the northern boundary to the coast.

Barrett suggests ill-defined boundaries to the south and east,⁵² and states that one informant did not place the boundary as far north as the Gualala River.⁵³ It is to be noted that most of Barrett's village names in territory south of the Russian River, which he allots to the Southwestern Pomo, are Miwok and not Pomo.⁵⁴ It is also notable that most of the disputed territories lying within the redwood belt were not occupied by permanent villages. Barrett places the southern boundary of the Southwestern Pomo at Salmon Creek, just north of Bodega Bay, whereas Kroeber's map,⁵⁵ based on the works of Barrett and Merriam, places the boundary at Duncan's Point. The surviving Pomo say that the region south of the Russian River was occupied by a "mixture of Pomo and Bodega Bay (Miwok) people."

The Southwestern Pomo evidently felt a sense of unity and, at least subsequent to the coming of the Russians, seem to have been united by a single chief. Toiyon was chief at Fort Ross during the Russian occupation. It seems likely that most of the Southwestern Pomo were concentrated at that point, for the flat in the vicinity of Fort Ross is described as being "covered with the houses of the Indians." Tahana, son of Toiyon, was chief when this group moved to Haupt's ranch (Potol) at some time in the latter half of the last century, when Haupt, a white man, took an Indian wife. Tahana died at Haupt's and was succeeded by Sam Ross, who is thought to have been his maternal cousin. Ross died at Haupt's in 1908. Who the succeeding chiefs were is not known. The present chief is Robert Smith, a man of about thirty-five, son of a Pomo mother and a Bodega Bay Miwok father, and possessing no hereditary claim to the chieftainship. The point of this discourse lies in its implications of a feeling of unity among those speaking the Southwestern dialect.

⁵⁰ *Op. cit.*, map opposite p. 356.

⁵¹ The Ethnogeography of the Pomo, map.

⁵² *Ibid.*, fn. 244, p. 211.

⁵³ *Ibid.*, fn. 161, p. 161.

⁵⁴ *Ibid.*, map.

⁵⁵ *Op. cit.*, map, p. 274.

As a tentative interpretation of Barrett's data, Kroeber⁵⁶ extends the village communities characteristic of the Russian River and Clear Lake divisions to the Southwestern Pomo. It seems very doubtful if they existed. Barrett's⁵⁷ division of the dialectic area into coast and river divisions is misleading, for it implies restrictions of habitat which seemingly never functioned. The surviving Indians seem well agreed on the boundaries of the group as a whole; they have no traditions of divisions within the area. In other words, the people speaking the Southwestern dialect felt a sense of unity among themselves, but within their area they were free to move about. Their way of life bears this out. As previously pointed out, no single source provided the larger part of their food; they were forced to draw it from a number of sources. Sea food came from the shore of the ocean; acorns came from the bald hills near the eastern edge of the plateau; salmon came mostly from the small tributaries of the Gualala and Russian rivers. Had there been village communities, they would likely have been east-west strips, extending from the sea to Austin Creek.

Within the memories of the oldest people the Southwestern Pomo have been living in the vicinity of either a white settlement or a ranch. These sites, then, loom in their minds as most significant, though some were places of relatively little significance in prewhite days. Hence it is most difficult to get an idea of the relative importance of old villages and camp sites. One important criterion of a village's importance is found in the presence or absence of a ceremonial structure or "sweat house," since only the most important villages had them. Unfortunately, information on just what villages contained sweat houses is lacking. The names of what are considered to have been the most important villages are underlined on the map. It is certain that not all the villages indicated were occupied at the same time; it is probable that few villages were permanently inhabited, since there were seasonal movements from one part of the area to another.

THE ANNUAL CYCLE OF ACTIVITIES

In the old days the Southwestern Pomo moved rather freely within the limits of their territory. The tribal boundaries were not rigidly enforced, but it was not good etiquette to cross them unless one was invited.

Though there were no regularly established trade channels, occasional parties crossed the hills to the east and traveled as far as the country of the Clear Lake Pomo, for magnesite and arrowhead material.

Within the tribal boundaries there was generally plenty—such as it was—so that privation was seldom known. There was no private ownership of land, of fishing sites, or of eagles' nests, the fruits of the country being for the first-comer.

Only during winter months were people likely to remain in villages. During other seasons they ranged far and wide: to catch fish along the Pacific, to

⁵⁶ *Ibid.*, map opp. p. 356.

⁵⁷ *Op. cit.*, 227.

gather acorns on the hills above Austin Creek. Families might move by themselves during the warm season and see their friends again only with the approach of winter.

During winter the interior villages were occupied, those that lie on the high ground above the south and middle forks of the Gualala. The immediate coast was nearly deserted. Not only did the activities of late fall lead to a movement to the interior; the exposed coast with its winter storms was not a desirable place in which to live, anyway.

Early winter was the time for attending to a thousand petty tasks, a time for visiting, a time for going to the sweat house of the larger villages, there to engage in a round of ceremonies or to enjoy the company of other men.

The women made baskets and cooked; the men looked to their equipment for the coming salmon season. Each family was doing the same things, for there was little specialization. Only a few men, more skilled than the others, made most of the arrows.

During early winter the diet was somewhat limited, for there was nothing new coming on at that time of year. It was a monotonous fare of acorn soup or bread, pinole or oat mush, venison, and possibly a few dried salmon from the previous year. The oats were ready to use, but the acorns were brought out of the big storage baskets each day and leached and pounded as needed. Fresh meat was broiled on a stick.

Each village consisted of a number of houses, constructed by leaning slabs of redwood bark against a center post. The houses were likely to be placed with no particular reference to one another unless the village contained a "sweat house," when they were likely to be roughly peripheral to it. The "sweat house" (*macha*) was a more pretentious structure than the dwellings, being constructed after the plan common to central California.

Each dwelling sheltered a family: father, mother, children, and grandparents. If the latter were too old to help about the house, it was their privilege to sit around the fire and smoke their tubular ash pipes. On the long winter nights they entertained the children with stories.

For each village there was a headman, whose office seems to have been at least partly hereditary. Government was loose, for there was very little to do. Life was simple and there were few occasions when disagreements arose.

By midwinter the heavy rains caused the Russian and Gualala rivers to rise and sweep the bars from their mouths, so that salmon could ascend the streams to seek out their spawning grounds. This introduced a new round of activities for the men. They left their families in the plateau villages and went down to the small streams to fish.

Salmon were speared, or caught in basketry traps. The spears consisted of shafts and detachable heads. The shafts were made of slender pine poles of varying lengths. The heads were made of bone or manzanita and were attached to the shafts with strings of rawhide or milkweed.

Fish traps (*hako*) were long and cone shaped and made of hazel. They were used principally in small creeks where dams could be constructed and the traps inserted in breaks in the structure. As the waters fell, the fishermen,

anxious to get the last of the run, followed down to the larger streams and even dammed them.

The newly caught fish provided fresh and welcome food. The surplus fish were split open, dried, and stored in large watertight baskets made of hazel and nutmeg-tree roots.

Meanwhile the deserted wives were not idle. They made their cooking fires with the buckeye drill stick and block. They pounded acorns and made pinole. They wove the rabbitskin robes which served as the outer covering of the deer-skin beds. They made carrying nets (chilun) and conical carrying baskets (buku'). They spent little time in making clothing, for the matter of wearing apparel troubled them but slightly. Clothes were few and footwear almost unknown. Perhaps the most important single garment was the shredded milk-weed skirt of the women.

By April the salmon season was drawing to a close, and with its cessation the drift toward the coast began. Now, in late spring, the coast villages were occupied. As yet it was not a rush season, but there were mussels, clams, and abalones to be gathered, ocean fish to be caught. To vary the diet an occasional deer was shot. The surviving Pomo deny that their ancestors had boats or hunted seals.

Shell food was baked, the shells being covered with leaves, coals, and hot rocks. Though this food seems to have been significant during periods of the year, there are no extensive midden accumulations in the region.

Sea fish were caught with kelp lines to which were attached deer-bone hooks baited with abalone. Most of these fish seem to have been consumed fresh.

Deer were still-hunted with the stuffed deer-head mask and bow. Bows were made of hazel and yew, and arrowshafts of hazel.

With the fine weather of early summer there were trips to plan and visitors to greet. Pomo from Ukiah and Cloverdale on the Russian River came to eat clams and mussels and to gather seaweed. There was no charge or trade, nor did the visitors need formally to ask permission. Their receptions seem to have been uniformly friendly, for the Southwestern Pomo have few traditions of serious trouble or warfare with their neighbors.

As the season advanced there was greater activity. Days were spent along the shore gathering and drying seaweed at Chapida or collecting salt at Kabesilawina, where the storm waves of winter had left their waters to evaporate in the shallow rock pans. Some, cleverer with their hands, made money of clamshells, and traded it for baskets with their less skilled neighbors. The locally gathered clams served as the raw material, for the Southwestern Pomo did not visit Bodega Bay until modern times.

Women sallied forth with their carrying baskets and digging sticks to gather roots. They knew that the best places to gather them were around the moist spots lying on the inner margin of the coastal terrace. There they found the wild celery (ba'choa), wild onion (kaba), and wild potato (hibula).

Fresh tender clover proved a tempting dish at this time of year and it was eaten in prodigious amounts. They accompanied it with customary cakes of pepperwood (behe) balls.

Probably not every year, but every few years, parties made the long trip to Clear Lake to obtain magnesite⁵⁸ (kabekis) and arrowhead material. These trips were generally made in early June, before the wild-oat harvest.

By mid-June there was a gradual lessening of activities along the coast. On the treeless rocky slopes the wild oats ripened first, and since these patches lay within the redwood belt they initiated the inland movement. With the grain fully ripened, three or four days sufficed for the harvest. Since oats were a dependable crop, there was no inclination to gather more than an amount sufficient to last until the next harvest. One large basket measuring about five feet in height and four feet in diameter held enough for the use of one family.

Wild oats and other seeds were pounded wet in a receptacle made by placing a basketry hopper on a flat rock. After drying, the pounded seeds were winnowed again and then stored. They were made into pinole and oat mush, the latter by stone boiling.

To assure the permanency of the natural openings and to maintain the quality of the oat crop, the dry straw was burned off every few years, generally after the first good rain of fall.

With the cessation of oat gathering the berries began to ripen. Around the same treeless hillsides were found manzanita berries and huckleberries. The former were made into the widely used "cider" or "lemonade" for immediate consumption, or were dried, pounded, and made into mush. Huckleberries were eaten fresh or dried and stored for later use.

By late summer or early fall quail were large and fat, making a welcome addition to a somewhat monotonous fare. They were taken by being gently herded along a brush fence into a long basket trap. These traps were similar in construction to salmon traps, with a length of twelve to fourteen feet.

The last great harvest of the year was the gathering of acorns. This called for a trip back to the high ridges which overlie Austin Creek, for it is on the bald hills of the highest part of the plateau that tan oaks were formerly found in abundance. The whole family went and all took part in the harvest. There was no cessation of activity so long as acorns remained, for acorns keep well and there are years when the crop fails.

With this last crop gathered and stored away in large baskets, the yearly cycle ends. As the old men lay about the sweat house smoking, they might have reflected that the lot of their people was not a particularly bad one. Perhaps their time and energy were used in getting a dab here and a dab there, but the very variety of their existence made for security against want.

POPULATION

It is a rather difficult matter to arrive at a prewhite population figure for the Southwestern Pomo. Any figures advanced must be the roughest of estimates, with a high possible error. With this in mind, 550 is suggested as being a fair approximation.

⁵⁸ There is a modern magnesite mine situated on a tributary of Austin Creek, but no reference was made to it. Possibly the Indians had no knowledge of this deposit.

From the number of villages enumerated it seems hardly likely that more than fifteen would be occupied at one time. We may allow five of these to be larger villages containing sweat houses. For these larger villages we may allow an average of ten families; for the smaller ones, four. If we count an average of six persons to each family we arrive at a grand total of 540.

The number would mean ninety families and houses. If we assume that most of the Pomo were concentrated at Fort Ross during the Russian occupation, we may well believe that ninety houses filled the flat.

A check of this estimate is offered by a comparison of the number of survivors of the Southwestern Pomo with the numbers of survivors of the remaining Pomo groups and setting this comparison against the estimate of the aggregate prewhite Pomo population. The census of 1910 gave the Pomo 1200 souls. The present (1929) population of the Southwestern Pomo, counting known half-breeds, is 109. There was an increase of 6 from 1925 to 1929. If this is indicative of trends, 80 should be a fair figure for 1910. If we allow 8000 for the aggregate prewhite Pomo population, on the basis of survivals we reach a figure of 533 for the Southwestern Pomo.

COMPARISONS AND CONCLUSIONS

THE DESCRIPTIVE treatment of the three Pomo areas is completed. Certain basic similarities as well as marked differences are immediately evident.

All three peoples seem to have been quite self-sufficient, which would normally be expected. Of the three groups the Kacha-poma seem to have been the most regular traders with outside groups. If any single food common to the three might be termed the "staff of life," it is the acorn. Fishing was important for all three areas, though there were differences in technique to fit the varying conditions.

That there was normally an easy sufficiency is borne out by the fact that though political boundaries were well defined there was frequent extension of gathering and fishing privileges to members of other tribes.

Of differences in practice and specialization in technique among the three groups there is abundant evidence.

The lake region is the most liberally endowed by nature. It acted as a magnet to draw not only the occasional trader for its special products, but also the permanent resident. This condition is clearly indicated by the variety of dialectic and language conditions found within a comparatively small area.

Diversity and abundance of resources in the lake region encouraged specialization of individuals and techniques. There were specialists in fishing and in the making of balsas. There were special techniques for lake fishing, the taking of waterfowl, and the use of tule.

On the political side there were small village communities. There were well-fashioned, semicommunal winter houses. Private ownership of land was well developed in at least one group of three communities.

Though for the entirety of the village communities of Clear Lake there was a population density of only some 5.3 persons per square mile, still this was greater than for the other two areas. During times of the year when the greater part of the population (more than 2200 people) was concentrated along the shores of the lake, its density must have been impressive.

The Russian River area was intermediately endowed by nature. It lacked the specialized resources of the lake. It possessed perhaps a larger and more dependable supply of acorns; another crop, the wild oat, rose to an importance that it did not possess in the lake region. Fishing was very much a seasonal occupation, though it was accompanied by several special techniques.

Political organization was based on the village community. Private ownership extended to certain hunting and gathering rights; it did not include ownership of land itself.

There was little specialization of craftsmanship. There was regularly established trade, and trading parties.

For the Kacha community there was but one village and but few significant camp sites. Apparently more marked than in the lake region was the "lying in" time of January and February.

The river area was intermediate in population density. The total area of the

Kacha-poma was about 30 square miles. For 125 people that allows a density of about 4.2 per mile.

In general abundance and variety the coast area was least well endowed by nature. It possessed special resources in several things: salt, seaweed, and shellfish. These attracted the regular visits of Indians from as far away as Clear Lake. Acorns and the wild oats were important; in no single resource did the area stand out.

The necessity for a variety of occupations to gain a livelihood compelled seasonal change of residence. As a result there were lacking private ownership, specialization of handicraft, close political organization, and frequent and regular travel to other areas.

Of the areas considered, this was the least densely populated. With an area of about 235 square miles and a population of 550 there was a density of slightly more than 2 persons per square mile.

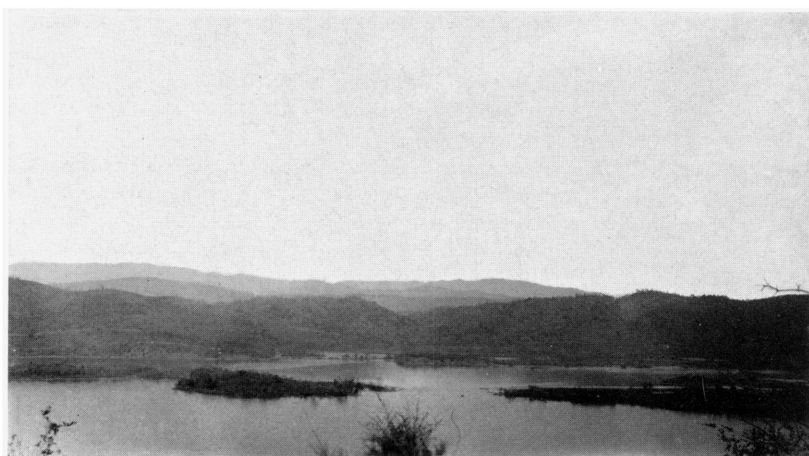
EXPLANATION OF PLATES

PLATE 5. CLEAR LAKE

a. Elem. Looking over East Lake from the south. The area shown formed a part of the Elem community, whose main village lay on the island in the near background.

b. Kaiyao. Looking over Bachelor Valley toward the northwest. The flat represents part of the floor of the once greater Clear Lake. Together with the area about Tule Lake, Bachelor Valley was held by the Kaiyao, the site of whose more recent main village, Kaiyao, lies in the immediate foreground.

c. Shigom, occupying one of the few extensive areas of flat ground lying between the mountains and the eastern shore of Clear Lake. In the middle background may be faintly distinguished the excavations over which the sudatories and dance houses were erected.

*a**b**c*

TYPICAL LANDSCAPES OF THE CLEAR LAKE ENVIRONMENT

PLATE 6. RUSSIAN RIVER

a. Kacha. Looking west across Redwood Valley and to Kacha-dana beyond. The line of willow in the middle background marks the course of the main stream, Kacha-bida. Just beyond, on the terrace corresponding to the one from which the picture was taken, is the site of Kacha village.

b. Kacha. Park landscape in Redwood Valley. Large valley oak in the foreground with live oaks flanking it.

c. South of Kacha. Park landscape of mixed oaks in the Russian River Valley near Ukiah.

*a**b**c*

TYPICAL LANDSCAPES OF THE RUSSIAN RIVER ENVIRONMENT

PLATE 7. COAST

a. Coastal terrace. Looking northward from a point about one mile north of Stewart's Point. Along the treeless terrace were the summer camps of the Gualala or Southwestern Pomo. The steep slope to the right marks the abrupt western termination of the Mendocino Plateau. The trees capping the edge of the plateau are Bishop pines.

b. Hillside, natural openings on valley flank, about two miles from the coast of the Pacific. Such openings provided wild oats and clover, both now quite inconspicuous. The winter villages of the Southwestern Pomo lay on the higher ground above the valleys.

c. Mouth of the Gualala, looking southward over the bay and bar.

*a**b**c*

TYPICAL LANDSCAPES OF THE COAST ENVIRONMENT