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Some Aspects of Santa Barbara Channel Prehistory

By

Robert Linville Hoover

A.B. (University of California) 1965
M.A. (University of California) 1969

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

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in

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of the

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Approved:

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3/20/71

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Introduction

During the summer seasons of 1927 and 1928, the Santa Barbara Channel region was the scene of archaeological excavations by the Department of Anthropology of the University of California, Berkeley. Ronald L. Olson led both expeditions in investigations of sites on the mainland and on Santa Cruz Island. The archaeological material described in this thesis comes from Olson's Santa Cruz Island sites. It represents one of the largest collections of archaeological material from the Santa Barbara Channel and was the first to be collected there in carefully controlled stratigraphic excavations. The time and expense of large-scale excavations today and the increasing disturbance of sites by pothunters makes the Olson Collection a significant one for California prehistory.

Approach to the Research Problem

The thesis consists of four major parts. The Introduction includes a brief summary of previous archaeological research in the Santa Barbara Channel region and a description and history of Santa Cruz Island. The second section includes an explanation of abbreviations and artifact typologies. The descriptive data from individual sites are summarized in the third section. In the final section, a cultural sequence for Santa Cruz Island is established and related to archaeological sequences on the neighboring mainland and in other areas of California.

Olson's field notes, photographs, and museum specimens have all been utilized in the descriptive section. Published materials are used to correlate the local sequence with the wider framework of California archaeology. I visited Santa Cruz Island for two

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weeks in the summer of 1968 and mapped those sites listed in this report, except where indicated otherwise. The reader will note that the number of artifacts in the tabulations may not always agree with those listed in Olson's preliminary report (Olson 1930). This fact is due to differences in classification, different totals in Olson's field notes, and the accidental loss of some specimens in the museum over the years.

History of Earlier Research in the Santa Barbara Area

The earliest archaeological excavations in the Santa Barbara Channel began during the last half of the nineteenth century. The Frenchman, Leon de Cessac, excavated sites on Santa Cruz, Santa Rosa, San Miguel, and Anacapa Islands and on the mainland in 1877 and 1878. Santa Cruz Island alone was the subject of a four months investigation, and the resulting collection is deposited in the Musée de l'Homme, Paris (de Cessac 1882; Heizer and Kelley 1962: Heizer and Reichlen 1964). Paul Schumacher, a contemporary of de Cessac, was also engaged in excavations in the Santa Barbara Channel region between 1873 and 1880 for the Smithsonian Institution and the Peabody Museum. He investigated interior mainland sites as well as those near Santa Barbara and on the Channel Islands (Schumacher 1873; 1875; 1896; 1960).

The United States Geographical Survey sponsored a scientific expedition to the Santa Barbara Channel in 1875. Dr. H.C. Yarrow, the party's physician, directed archaeological excavations at SBa-44, 46, 77, and 78 on the mainland in Santa Barbara County. The Reverend

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Stephen Bowers, who had served on Yarrow's expedition, later began extensive pothunting activities on the mainland and on Santa Rosa Island (Bowers 1877; 1885). Philip Mills Jones (1956) was employed by the University of California to collect extensively from Santa Barbara Channel region continued to be of a semi-professional or amateur nature until the 1920's.

J.P. Harrington (1928) conducted excavations of the Burton Mound (SBa-28) on the waterfront of the city of Santa Barbara in 1923. A large collection was recovered and sent to the Smithsonian Institution, but Harrington noted no stratigraphic sequence at the site. Later, D.B. Rogers (1929), the foreman of Harrington's group, claimed to have found evidence of both Hunting and Canalino Cultures there.

Rogers made the first serious attempt to establish a chronological sequence for the prehistoric Santa Barbara Channel. Working for the Santa Barbara Museum of Natural History, he excavated mainland coastal sites from Gaviota to Rincon Point and sites on Santa Cruz, Santa Rosa, and San Miguel Islands. Rogers distinguished three successive cultures which he believed were associated with influxes of new physical types.

The earliest of these cultures was called Oak Grove. Distinguishing features included semi-subterranean pit houses, milling stones and metates, ventrally extended burials, widespread use of ocher, and the crudity of chipped stone. The intermediate Hunting

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Culture was characterized by large foliate points, ventrally flexed burials, basket-mortars, true mortars and pestles, steatite tubular beads, and the use of asphaltum. The final Canaliño Culture represented the prehistoric manifestations of the historic Chumash. Hemispherical surface huts of willow poles and thatch, sewn plank canoes, flexed burials, steatite vessels and effigies, and small concave-based triangular points were major features of this period. The coastal population was sedentary and fairly dense due to the exploitation of marine resources.

Olson (1930) published a brief monograph on his excavations in the year following the printing of Rogers' book. Olson recognized five cultural periods on the mainland and three on Santa Cruz Island. A hypothetical Archaic Period was followed by the Early Mainland Period, characterized by the already developed use of steatite, mortars and pestles, and basket stones. Some milling stones and metates were present. Chipped stone tools included projectile points, scrapers, and drills of chert. Bone gorge fishhooks and awls were also present. A variety of steatite and shell beads and ornaments, steatite pipes and bowls, abalone dishes, quartz crystals, and ocher were used. An Intermediate Mainland Period was distinguished by the absence of the milling stone-metate complex and the addition of circular shell fishhooks, bone whistles, elaborate shell inlay work on bone tubes, and steatite ollas. Shell, bone, and steatite beads and tubes increased in number and variety. A Late Mainland Period represented the protohistoric horizon. Steatite ollas became more

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Table 1

Olson's Sequences

Mainland	Island
Historic	Historic
Late Mainland	Late Island
	Early Island
Intermediate Mainland	
Early Mainland	
Hypothetical Archaic	

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numerous, and comals of steatite appeared. A brief post-European Period terminated the sequence in historic times.

Of Olson's three Santa Cruz Island periods, the Early Island and Late Island Period correspond roughly to the Intermediate and Late Mainland Periods respectively, but they begin and end slightly later than their mainland contemporaries.

In 1937, George F. Carter (1941) excavated a small portion of a stratified site near Point Sal. He distinguished three strata, designated I, II, and III from bottom to top. Stratum I contained milling stones, one chopper, crude knife blanks, and large side-notched points. Stratum II held milling stones and side-notched and stemmed points. Mortars, small points, charmstones, and steatite objects were characteristic of Stratum III. In correlating his sequence with that of Rogers, Carter noted the absence of an Oak Grove occupation. He equated his Strata I and II with earlier and later phases respectively of Rogers' Hunting Culture. Stratum III was the equivalent of the Canaliño Culture of Rogers.

In 1941, Phil C. Orr (1943) of the Santa Barbara Museum of Natural History salvaged part of the Mescalitan Island site (SBa-46). On the basis of this work and Rogers' earlier collections, Orr modified Rogers tripartite sequence by subdividing the Canaliño Period into Early, Middle, and Late Phases. The Early Phase was characterized by ventrally flexed burials in rows, small Olivella disk beads, bird bone whistles, abalone dishes, and straight fish-hooks. Charmstones and basket-mortars were Hunting Culture holdovers. The Middle Phase was a transition from orderly burial to

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reburial. Bird bone pins, large plain abalone disks with central perforations, and flat-rimmed bowls were present. Shell inlay work reached a climax. Large steatite beads were replaced by large Olivella and inlaid bone beads. Comals, pipes, and bowls of steatite appeared. Orr's Late Phase was characterized by variously oriented flexures and reburials, the use of grave markers, large Olivella and tubular shell ornaments, clam shell and bone beads, limpet ring ornaments, circular shell fishhooks, and steatite comals and pipes were present. Inlay work declined.

Between 1941 and 1962, Orr conducted continuing excavations on Santa Rosa Island. He found the burned bones of dwarf Pleistocene mammoths in fire-colored soils with radiocarbon dates of 40,000-20,000 B.C. To Orr, these features probably represent the butchering and cooking sites of early man. He notes that the mammoth bones are not articulated and that the fire areas are concentrated within a limited area.

Three distinct cultures of Post-Pleistocene times are recognized by Orr on Santa Rosa Island. The Dune Dweller Culture was characterized by occupations and burials on well-drained sand dunes. The people of the earlier phase (5,500-2,000 B.C.) depended on a diet of Haliotis rufescens, large fish, and sea mammals. Burials were found in sitting position. A few well-made bone tools and abalone disk and clam ornaments were present.

The later Black Bottom Phase (4,000-3,000 B.C.) of this culture featured burials flexed on the side, barrel, spire-ground, and rectangular Olivella beads, various abalone and clam ornaments, steatite

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pipes, tubular bone beads, charmstones, and mortars of basalt and sandstone. The diet consisted of Haliotis cracherodii, Mytilus californicus, and abundant sea mammals.

Orr's second island culture, the Highlander (4,000-2,000 B.C.), is characterized by knoll-type sites back from the sea with circular house depressions. Burials were flexed either prone or supine. There was a lack of shell and bone in Highlander sites, but many mortars, circular shell fishhooks, doughnut stones, milling stones, bladelets, and small concave-base triangular points were present. A vegetable diet was supplemented by fishing.

The final Canaliño Culture (1,000 B.C.- 1812 A.D.) was abundantly represented in villages near the sea with circular house depressions. Haliotis cracherodii, Mytilus californicus, the Chione, sea mammals, birds, and fish comprised the diversified diet. Burials were flexed in a prone position with many grave goods, including elaborate bead and ornament types and circular fishhooks. Cemeteries became so packed with burials that the practice of reburial was necessary to make room for new individuals. Mortars were rare (Orr 1951; 1962a; 1962b; 1964; 1968).

In 1958, a University of California, Los Angeles, party located 21 sites on the three Anacapa Islands (McKusick 1959). The author believed the sites were all occupied during the Late Horizon and represented temporary camps where fish, shellfish, birds, eggs, and sea mammals were exploited in appropriate seasons of the year. McKusick's party rediscovered sites mentioned by de Cessac (1951: 8) in 1878 and by van Valkenburg of the Los Angeles County Museum in 1939.

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The most recent sequence proposed for the Santa Barbara Channel was proposed by William K. Harrison (1964). Based on excavations of the University of California, Santa Barbara, this chronology subdivides Rogers' Oak Grove Culture into two phases. The earliest or Goleta Phase began sometime before 5,100 B.C. It was characterized by milling stones and mullers, the predominance of mussels as food, and both semi-flexed and semi-extended burials. The El Capitán Phase began around 3,350 B.C. The milling stone and muller predominated, but mortars, pestles, and small stone bowls appeared. Clam replaced mussel as the dominant seafood. Burials were fully extended. The exact relationships between the Goleta and El Capitán Phases was unclear to Harrison. He suggested that there might be an intermediate phase or that the Goleta Phase might have been a very lengthy period.

Harrison noted that his two Oak Grove phases were followed by two Hunting Culture phases. The Extranos Phase appeared about 2900 B.C. and was characterized by an equal proportion of milling stones and mullers to stone vessels and pestles, large side-notched and stemmed points, and the use of asphalt only for mending stone vessels. Fully-flexed burials were ordinarily on their backs. Dietary emphasis was placed on sea mammals, large land mammals, larger fish, and a greater variety of shellfish. The succeeding Del Mar Phase featured the use of the basket-mortar and pestle, use of asphalt for basket-mortars and tool hafting, large shell beads, and fully-flexed ventral burials.

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A final Rincon Phase, dating between 1950 and 1450 B.C., represents a combination of certain features of the Oak Grove Culture with other features of the Hunting Culture. Milling stones and mullers are found with a few well-made mortars, pestles, and stone vessels. Large steatite vessels, a great variety of large and some small points, microdrills, asphalted basketry, bone fish gorges, and steatite tubes and pipes were other characteristic features. Shell bead types included thick clam disk beads, square Olivella beads, and barrel Olivella beads. Burials were fully flexed. Dietary remains included a wide variety of shellfish, land mammals, and birds. Harrison proposes that the Hunting Culture represents an external immigration of seafarers who existed for some time in the Santa Barbara Channel without drastically influencing the earlier Oak Grove collectors because it concentrated on the exploitation of maritime resources. Finally, he believes that the Oak Grove substratum absorbed numerous Hunting traits to become Rogers' Canalino Culture. Harrison concentrates on problems of the earlier cultures on the Mainland, but he has the many radiocarbon dates of the last fifteen years to support his sequence.

Santa Cruz Island: Geology, Geography, and History

Santa Cruz Island, the largest of the California Channel Islands, is one of the group of four northern islands, lying twenty-five to thirty miles south of the Santa Barbara coast. This northern group represents the highest peaks of the submerged Anacapa Range and Province which takes a parallel east-to-west course with the other mountains of the Transverse Ranges of California. The sub-

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Table 2

Proposed Chronologies for the Santa Barbara Channel Region

ROGERS	OLSON		CARTER	ORR	HARRISON	DATE
Historic	Historic			Historic	Canalino	
Canalino	A: Late Mainland	B: Late Mainland	Stratum III	Late Canalino		
		B: Middle Mainland		Middle Canalino		1450 B.C.
		B: Early Mainland		Early Canalino	Rincon Phase	1950 B.C.
Hunting	A: Middle Mainland	B: Archaic	Stratum II	Hunting	Del Mar Phase	
	A: Early Mainland		Stratum I		Extranos Phase	2900 B.C.
Oak Grove	Archaic			Oak Grove	El Capitan Phase	3350 B.C.
					Goleta Phase	5100 B.C.

merged chain emerges on the Mainland to the east to form the Santa Monica Mountains (Reed and Hollister 1936). The mountain chain was connected to the Mainland until the terminal Pleistocene, when the general rise in sea level isolated the Channel Islands as valuable preserves for numerous endemic plant and animal relic populations. The Santa Barbara Embayment to the north forms the Santa Barbara Channel.

Santa Cruz Island is about twenty-four miles long from west to east ends and about five miles across at its widest point between the north and south sides of the island. The general shape of the island is one of a rather potbellied bird which is flying eastward. The major part of the island consists of two parallel east-west mountain ranges flanking a central valley. The Northern Range consists of andesites and basalts of Miocene age. The range is extremely rugged and reaches 2,407 feet above sea level on Picacho Diablo, the island's highest peak. The Southern range is a more complex agglomeration of Miocene rhyolites and rocks of the Miocene Temblor and Eocene Domegine series with some Mesozoic hornblends and diorites. Elevations in the south reach 1,486 feet on Sierra Blanca. A peninsula of Monterey Shale connects the volcanic eastern end of the island with the rest. A major fault down the axis of the Central Valley has caused shifting drainage patterns. At present, most of the streams from the central part of the island pass out on the earth shore through Cañada del Puerto at Prisoner's Harbor. A number of large streams also exist on the west end south side of the island

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(Bremner 1932).

Santa Cruz Island receives between 20 and 40 inches of rain per year, most of it in the winter months. Temperatures vary greatly at any time due to topographic differences. The Central Valley experiences a climate similar to that of the Santa Ynez Valley on the mainland ---high summer and mild winter temperatures with about 29 inches of annual rainfall. The western end of the island is characterized by summer fog and strong winds characteristic of the mainland coast much further north. A limited supply of fresh water is normally available along the lower sections of several major streams during the dry summer months, and water is always present in the Cañada del Puerto.

Indian groups speaking divergent forms of the Chumashan Language of the Hokan Family occupied the northern Channel Islands when the Spanish arrived in the sixteenth century. Santa Cruz Island was first mentioned by Cabrillo in 1542 on his coastal exploring expediation of California. He noted a relatively dense population living in hemispherical huts of eel grass, and exploiting the maritime environment. The largest settlements were well-placed for trade with mainland Chumash villages (Brown 1967). Later Spaniards frequently noted the higher economic and technical development of the Chumash in contrast with other native California groups. Canoes of sewn planks provided access to the mainland and other islands. These canoes were unique in North America (Heizer 1941). The protohistoric Chumash excelled in shell, bone and wood working. Both coiled and twined basketry had reached a high state of perfection (Deetz and Dawson 1964; 1965). Pictographic art was spectacular

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(Grant 1965).

After some 250 years of sporadic European contact, the life of the Indian had become less than idyllic. European visits to the island took their toll of native lives, and by 1805, the missionary Estevan Tapis wrote that the islanders lived "in more than usual poverty, the men wholly naked, the women little less so, hungry, with no recourse but fishing and some seeds got in trade from the natives of the mainland in return for the beads they themselves make from shells" (Bolton 1908). The remnants of the native population were removed to the mainland missions in 1812, following a disastrous earthquake.

Andrés Castillero originally petitioned Governor Alvarado for the 52,760 acres of Santa Cruz Island. The rancho grant was approved in 1839. Though the land exceeded the 48,000 acre legal maximum, an exception was made to prevent the island from falling into foreign hands. After the settling of lengthy litigation, the Castillero heirs sold the sheep and hog rancho in the 1870's, and the Caire family operated it as a combined sheep, grain, and wine producing estate. Craftsmen from Europe were imported to build and operate facilities. Santa Cruz Island wines were of high quality in the early twentieth century.

Disputes over division of the Caire estate around 1930 resulted in the purchase of most of the island by the Stanton family of Pasadena and the retention of the eastern end by the Gherinis, descendents of the Caires. The Stanton Ranch produces high-grade beef, while the Gherinis raise improved breeds of sheep. The wild

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sheep of Spanish times have overrun the island and are responsible for widespread erosion. Attempts to eliminate them have been unsuccessful.

Site Concordance

The two persons responsible for the most extensive site surveys on Santa Cruz Island were Leonard Outhwaite, working at the beginning of this century, and Ronald L. Olson, who located a number of sites beyond those which were excavated during the summer of 1927 and 1928. The two systems of site numbering led to confusion. With the establishment of the University of California Archaeological Survey at Berkeley in 1948, all recorded sites within the state were assigned new numbers to avoid duplicate site numbers or the same number for two different sites. The UCAS designations have been used in this dissertation. The concordance below lists sites visited both in 1927 (*) and 1928 (**).

UCAS No.	Olson No.	Outhwaite No.	Location
SCrI-2*	86	-	Frazer's Point
3*	6	85	Frazer's Point
11*	110	-	Forney's Cove
14*	80	-	Forney's Cove
16*	111	-	Forney's Cove
30*	109	-	Forney's Cove
31*	76	76	Forney's Cove
32*	87	-	Forney's Cove

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34*	103	-	Forney's Cove
35*	89	-	Forney's Cove
37*	90	-	Forney's Cove
39*	5	-	Forney's Cove
44*	96	-	Forney's Cove
47*	103	-	Forney's Cove
54*	73	73	Forney's Cove
81*	4	70	Christy's Beach
82*	4W	-	Christy's Beach
83*	3	69	Christy's Beach
93*	65	65	Williams Canyon
95*	95	-	Williams Canyon
100**	64	64	Posa Landing
101**	63	63	Posa Landing
103**	193	-	Johnson's Landing
104**	62	62	Johnson's Landing
105**	61	61	Johnson's Landing
106**	60	60	Laguna Point
107**	59	59	Laguna Creek
119**	194	-	Laguna Creek
122*	2	52	Willows
124*	2a	-	Willows Canyon
131*	1	51	Coche Prietos
135**	192	-	Smuggler's Point
138**	49	49	Smuggler's Cove
147*	9	42	Prisoner's Harbor
154*	179	-	Orizaba

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159*	8	36	Orizaba
161*	180	-	Orizaba
162*	7	-	Orizaba
168*	173	-	Orizaba
179*	183	-	Lady's Harbor
181*	26	26	Lady's Harbor

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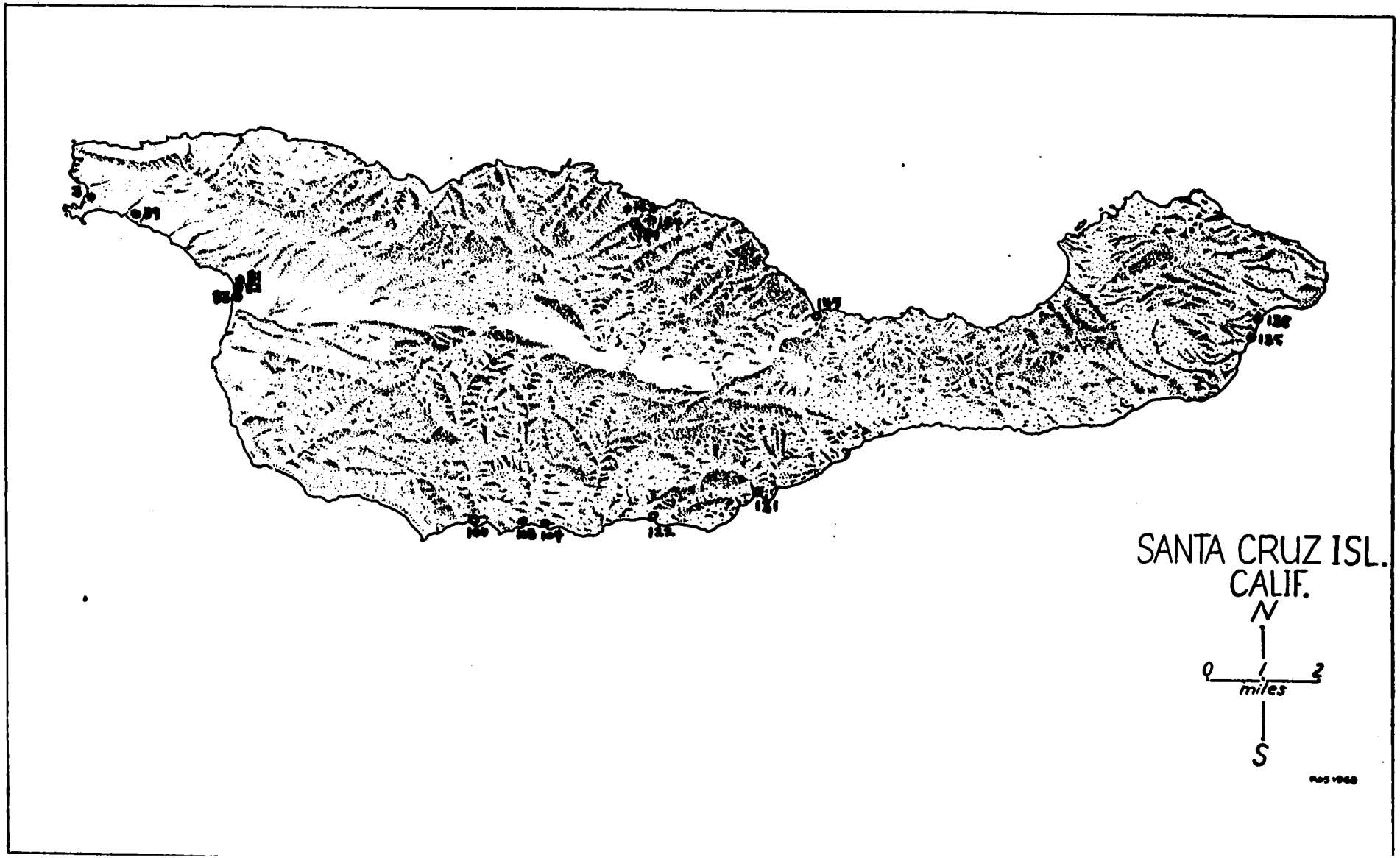

Abbreviations and Typologies

Abbreviations

The several uncommon abbreviations used in the text are listed below with their definitions. In the tabulations of burials and artifacts, pit locations are designated by the use of a single letter. Burials and their associated artifacts are indicated by a hyphenated letter-number combination. Burials were not recorded by the excavators in order of descending depth but in random order. Thus, a particular burial number can only be used for identification and usually bears no relationship to vertical position. Abbreviations found in other than the burial or pit column are described below.

A adult
C child
E east
Ex extended
F. female
Fl flexed
I infant
LF legs flexed
LS left side
M male
N north
no loc. no location given
Pr prone
RS right side
S south
Su supine
W west
X item present
- indeterminate or incomplete data

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Shell Bead Typology

1. Olivella biplicata, whole shell
    a. hole punched in side
    b. hole punched in side, surface ground smooth
    c. hole punched in side, very small shell
    d. two holes punched in the same side
    e. holes punched in opposite sides
    f. spire ground off
    g. spire ground off, hatched incising on the body
    h. spire ground off, hole punched in side
    i. spire ground off, holes punched in opposite sides
    j. spire ground off, base ground down
    k. spire ground off, base ground down, parallel-line incising on the body
    l. spire ground off, base ground down, hole punched in side
2. Olivella biplicata, large section of the shell
    a. half shell, section from side of shell, with spire and shelf
    b. section from side of shell, without spire or shelf
    c. section from the side of shell, a narrow strip including the base of the spire, perforated at one end
    d. lipped section with a remnant of the internal shelf
3. Olivella biplacata, disk beads
    a. large disk, small perforation
    b. large disk, small perforation, thick, edges rough
    c. large disk, large perforation
    d. large disk, large perforation, hatched incising on edges
    e. large disk, large perforation, diagonal-line incising on

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edges

f. very small disk

g. cupped disk, from the side of the shell

h. cupped disk, from the side of the shell, hatched incising on edges

i. deep cup, section of the spire

4. Olivella biplicata, rectangular beads

a. large

b. small

5. Haliotis spp., disk beads

a. large disk

b. large disk, incised edges

c. small disk

d. small disk

e. disk from the side of the siphonal opening

f. small disk from the epidermis

6. Haliotis spp., rectangular beads

a. one perforation

b. two perforations

c. two perforations

d. two perforations, concave-sided square

7. Haliotis spp., tubular beads, made from the rim

a. simple tube

b. vertical incising on the edges

c. vertical incising on the edges, second perforation through one end

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8. Haliotis spp., perforated "pearl"

9. Haliotis spp., pendant-like beads

    a. narrow, thick rectangle, transverse perforation at one end

    b. thick trapezoid, transverse perforation at the small end

10. clamshell disk beads

    a. small disk, probably all Tivela stultorum

    b. thick disk or short tube, Tivela stultorum

11. Tivela stultorum

    a. simple tube

    b. hatched incising at ends

    c. parallel-line incising on body

    d. plummet-shaped tube

12. clamshell spherical beads

    a. Tivela stultorum sphere

    b. Tivela stultorum sphere, hatched incising at ends

    c. Tivela stultorum sphere, parallel-line incising on body

    d. Astraea undosa sphere

13. Megathura crenulata, whole shell

    a. hole drilled at one end

    b. two holes drilled at one end

14. Megathura crenulata, transverse section, unperforated

15. Megathura crenulata, rings formed by the apical opening

    a. plain to squared ends

    b. offset at one end

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16. Univalve columellae, perforated

    a. tube, columella whole or nearly whole

    b. tube, small section of columella

    c. perforation through one end

17. Conus californicus bead

    a. spire ground off

    b. spire ground off, hole punched in side

    c. section from base of spire, tip ground off

18. Dentalium spp., cut sections

    a. D. pretiosum

    b. D. neohexagonum

19. Mytilus spp., disk beads

    a. thin disk

    b. thick disk, Mytilus californianus

20. Mytilus spp., rectangular beads

21. Mytilus californianus, tubular beads

    a. long tube

    b. short tube (length less than diameter)

22. Hinnites multirugosis, tube, from the hinge

    a. with notch

    b. without notch

23. Trivia spp., hole in side

    a. T. californica

    b. T. solandri

24. Limpet shell, apex ground off

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a. Acmaea mitra

b. Diadora spp., very small shell

c. Fissurella volcano

25. Cypraea spadicea, whole shell

a. one hole in lip

b. two holes in lip

26. Mitra spp., whole shell

a. hole punched through lip

b. hole abraded through lip

27. Natica spp., whole shell, lip perforated

28. Tegula spp., hole punched through first whorl

29. Calliostoma spp., whole shell

a. hole punched through first whorl

b. spire ground with side perforation

30. Nassarius mendicus, whole shell, hole by horizontal abrasion through second whorl

31. Thais emarginata, whole shell, hole by horizontal abrasion in second whorl

32. Homalopoma Carpenteri, whole shell, hole punched or abraded through first whorl

33. Littorina spp., whole shell, perforation punched through side

34. Tritonalia spp., whole shell, hole by horizontal abrasion

35. Erato vittellina, whole shell, hole punched in side

36. Cerethidea californica, whole shell, hole punched in lip

37. Fusinus Kolbelti, whole shell, hole punched through side

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Shell Ornament Typology

This topology can be applied to all shell ornaments, although Haliotis ornaments show the greatest typological variation. The species of shell are indicated in the tabulation. Three symbols are used in this system of classification: a capital letter indicates the shape of the ornament, an Arabic numeral indicates the number and position of perforations, and a lower case letter indicates the style of incision, punctation, or serration. An unperforated ornament is described by a capital letter only, a perforated specimen by a capital letter and a numeral, and a perforated and decorated ornament by all three symbols.

Shapes

A	crescent
B	dumbbell
C	circular to slightly ovoid
D	teardrop
E	square to rectangular to sub-rectangular
F	triangular
G	ring
H	hand mirror shape
I	irregular
J	spoon-shape
K	gasket-shape
L	propellor-shape
M	curved rim section
N	trapezoidal; trapezium; truncated triangular
O	oval
P	pearl nodule

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Perforations

1 one at end or edge

2 one central

3 two at one end or edge

4 one at each of two opposite edges

5 two central

6 one central; one at edge

7 one central; one at each of two opposing edges; central perforation less than twice the diameter of edge perforations

8 one central; one at each of two opposing edges; central perforation greater then twice the diameter of edge perforations

9 three, forming a triangle: on at each end and one off center, or two at on end and one at the other

10 two at each of two opposite ends or edges, forming an approximate rectangle or square

11 two at one edge, one central, and one at the opposite edge

12 two at each of two opposite ends and one central

13 three at one end and two at the other; or four and three; five and four

14 five in a row

15 four at each of two opposite ends; or five at each of two opposite ends.

16 three at one end, two at the other, and one central

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17 a circle of perforations around the edges

18 three along one edge

19 three in a row in the center

Decoration

a edge incised with fine parallel lines

b. edge incised with zig-zag line

c edge incised with cross-hatching

d edge incised with broad parallel lines

e face incised with concentric circles

f. edge serrated

j face decorated with drilled punctations

aa, bb, cc, etc. the same as a, b, c, but with decoration on both sides of the ornament

ab, ac, bc, etc. one type of decoration on one side; another on the reverse side

Shell Fishhook Typology

1. smooth pointed shank
2. grooved or knobbed shank
3. notched pointed shank

Steatite Bead Typology

1. tubular, large and thick
   a. simple tube
   b. additional transverse holes in the sides
   c. one groove around the circumference
   d. multiple grooves around the circumference

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2. tubular, large and thin-proportioned
    a. simple tube
    b. two grooves around the center
    c. two raised bands around the center
3. bitapered tubular, some with bulging center
4. bitapered tubular, raised band around center, lipped ends
5. tubular, small and thin
6. spherical or thick disk, large
    a. simple sphere
    b. one groove around center
7. spherical, small
8. disk, large
    a. simple disk
    b. hole off center
9. disk, medium size
10. disk, very small
11. thick and pendant-like
12. hexagonal
13. truncated cone
14. hourglass shape

Steatite Ornament Typology

1. triangular, perforation at base
2. subrectangular, perforation at one end
    a. ends flat
    b. ends rounded

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3. Circular, grooved edge, four perforations

4. Ring-shaped

Steatite Pipe Typology

1. long tubular, tapered toward one end

2. long tubular, one end constricted

3. shallow cup, perhaps a copy of a European pipe bowl

4. elbow pipe

Mortar Typology

1. globular mortar with convex, incurved sides, and a rounded bowl

   a. recurved, rounded rim, round bottom

   b1. open, rounded rim, round bottom

   b2. open, rounded rim, flat bottom

   c. flat rim

2. oval mortar with convex, incurved sides, and an ovoid bowl

   a. recurved, rounded rim, round bottom

   b1. open, rounded rim, round bottom

   b2. open, rounded rim, flat bottom

   c. flat rim

3. mortar with slightly convex sides, the greatest diameter at or near the rim, the bottom flat

   a. rounded rim

   b. rim bevelled to the inside or outside, or both

   c. flat rim

   d. rim flanged or lipped to the inside or outside, or both

   e. grooved rim

   f. stepped rim

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4. mortar with slightly convex sides, the greatest diameter at or near the rim, low and broad-proportioned; the maximum diameter is greater than twice the height; sides are approximately parallel at the rim; the bottom flattened but not set off from the sides by an angle
   a. rounded rim
   b. flat rim
   c. grooved rim
5. mortar with convex sides toward the bottom; sides approximately parallel toward the top; greatest diameter in the upper half; bottom is flattened, blending into the sides or set off from them by a slight angle
   a. rounded rim
   b. flat rim
   c. grooved rim
6. tall, nearly vertical-sided mortar with slightly incurved sides
   a1. rounded rim, rounded bottom
   a2. rounded rim, flat bottom
   b1. flat rim, rounded bottom
   b2. flat rim, flat bottom
7. hopper mortar with a shallow, saucer-like bowl
   a. in a unmodified or slightly modified boulder
   b. in an unmodified flat slab
   c. in a shaped flat slab
8. pigment mortar with incurved sides, rounded rim, and conical bowl

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a. round bottom

b. flat bottom

c. double bowl (one bowl in each end)

9. rough boulder with a conical bowl

Pestle Typology

1. cylindrical pestle

a. circular cross-section

b. flattened and rectangular cross-section

2. tapered pestle

3. cobble pestle, modified only through use at one or both ends

4. pestle with flanged proximal tip

a. circular cross-section

b. flattened cross-section

5. pestle with flange below the proximal tip; may have a second flange at the tip

6. small, stubby pestles, often with red ocher smeared on the end

a. tapered

b. with a waist pecked or abraded from two sides in the middle

c. elongate pebble, modified only through use at one or both ends

Projectile Point Typology

1. bipointed, leaf-shaped point

a. heavy, flat, broad, and very large, over 12.0 gm.

b. smaller and relatively thicker, over 4.0 gm.

c. small and light, under 4.0 gm.

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2. convex-based, leaf-shaped point

    a. over 4.0 gm.

    b. under 4.0 gm.

3. long, slender, triangular, with straight sides and a round base; thick relative to its width

4. thin, triangular, with concave bases

    a. relatively large and broad, over 4.0 gm.

    b. thin, delicate concave-base and swallowtail points, under 4.0 gm.

5. points with up-sloping shoulders and contracting stems; shoulders vary from slight to pronounced, and in orientation from steeply up-sloping to angles from the axis of the specimen

    a. heavy, flat, broad, very large; over 12.0 gm.

    b. thick, long, narrow, medium-sized

    c. thick, short, broad, medium-sized

    d. thin, flat, relatively long; a smaller version of 5a, with which it does not intergrade; medium-sized

    e. small and light

    f. thick, with a very large, broad stem

    g. small, broad, light-weight, triangular body with a pointed stem

6. points with shoulders, barbs, and contracting stems; barbs vary from slight to pronounced

    a. heavy, flat, broad, very large, over 12.0 gm.; most of these have parallel sides from above the barbs nearly to the tip

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b. long, narrow, medium-sized, over 4.0 gm.

c. short, thick, broad, medium-sized

d. small and light, weight under 4.0 gm.

7. corner notched, all of obsidian

8. side notched

a. long, narrow, thick; corners rounded, notches high on the sides

b. short, broad, thick; corners rounded, notches high on the sides

c. long, thin and flat; corners sharp, notches low on the sides, all of obsidian

Knife Typology

1. leaf-shaped, both ends pointed or rounded

a. small; thick and not very broad; ends rounded; hafted on the side, rather than the end, as indicated by asphaltum on some specimens

b. medium-sized; broad, flat, and relatively thin; ends rounded

c. medium-sized; long and relatively slender; ends pointed

d. medium-sized; broad and thick; made by percussion-flaking only; ends pointed to rounded

e. large, broad and flat, ends rounded

2. leaf-shaped, with convex base and pointed tip

a. large; long, broad, and thick

b. large; long and very broad, thin and flat

c. medium-sized; broad and relatively thin

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3. triangular, with round base and straight sides; relatively thick
    a. medium-sized; length is approximately twice the width
    b. extremely long, thick, and narrow; the length is greater than five times the width
4. flat-based, equilateral triangle
5. shouldered and barbed, with a contracting stem and parallel sides; thin and relatively flat

Drill Typology

1. microdrill; made on small bladelets with triangular or trapezoidal cross-section; unretouched
2. short, thick, percussion-flaked only
3. long, slender, triangular in cross-section, finally pressure-flaked
4. short, thick, retouched by pressure-flaking
5. expanded base
6. whole quartz crystal, modified by use

Bone Artifact Typologies

Bone artifacts in the collection show little apparent variation through time. I have, therefore, found it convenient to use the bone classification of Gifford (1940) to describe most of the bone tools. In other cases, I have been forced to describe unique specimens verbally.

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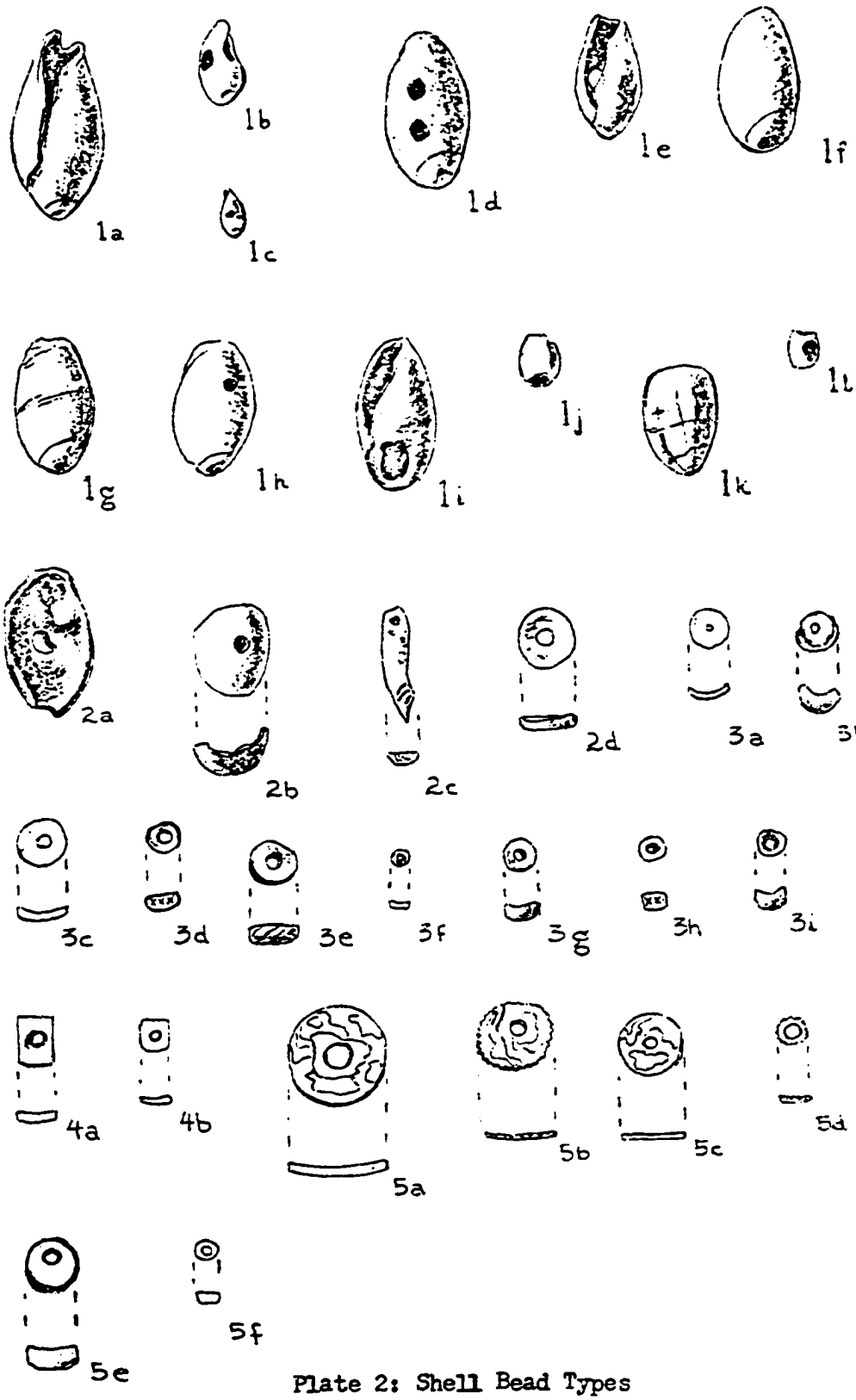

Plate 2: Shell Bead Types

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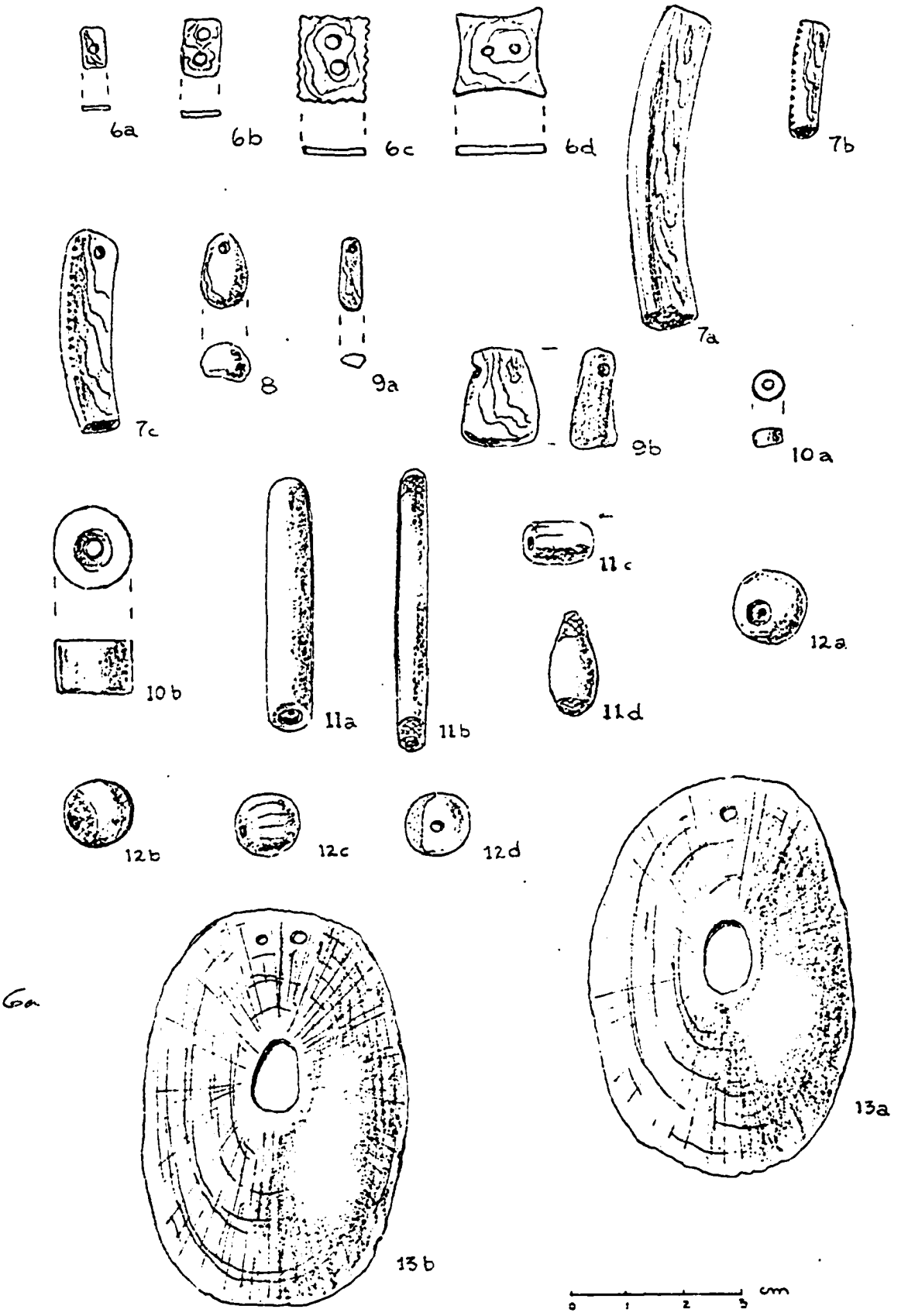
Plate 3: Shell Bead Types



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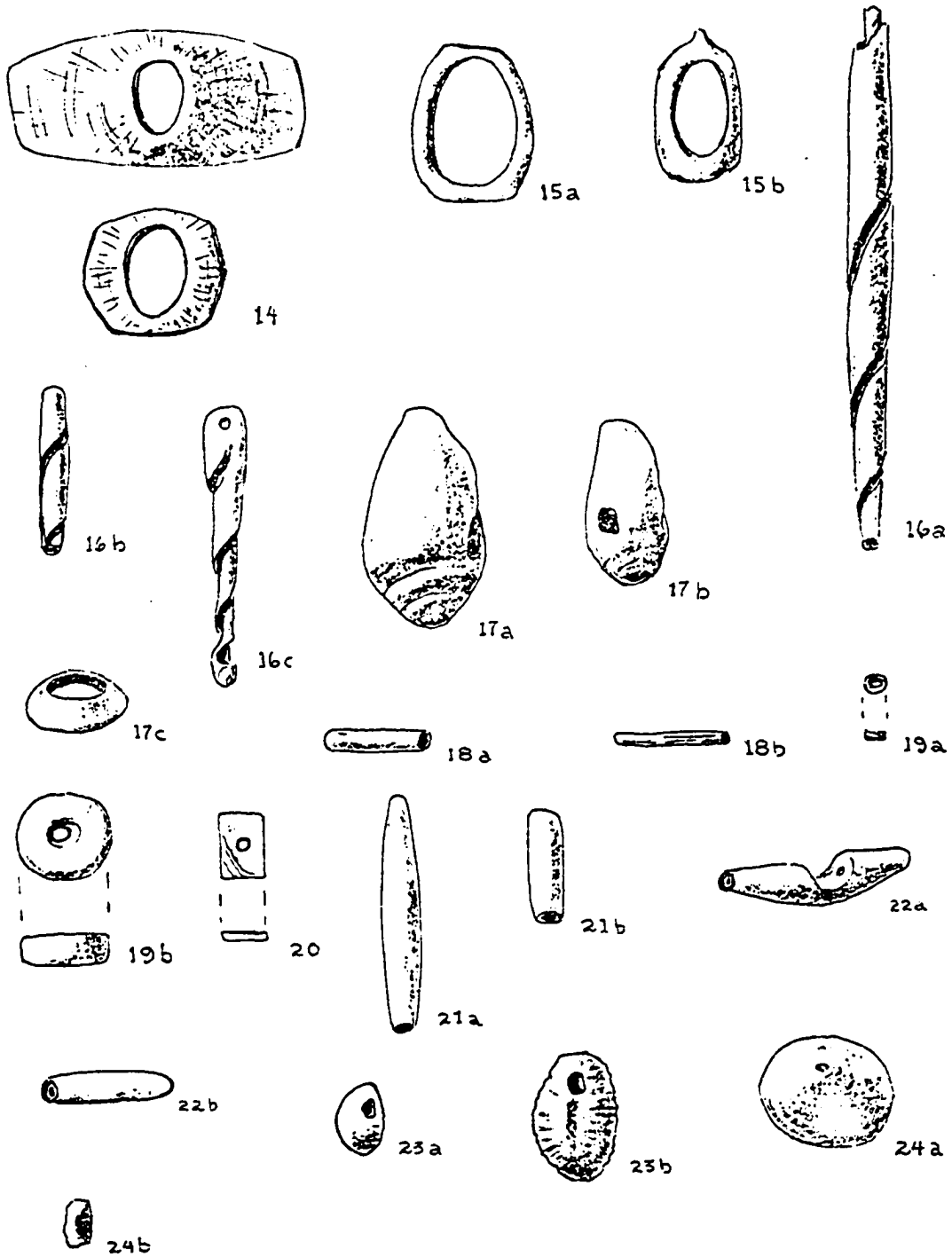

Plate 4: Shell Bead Types

6a

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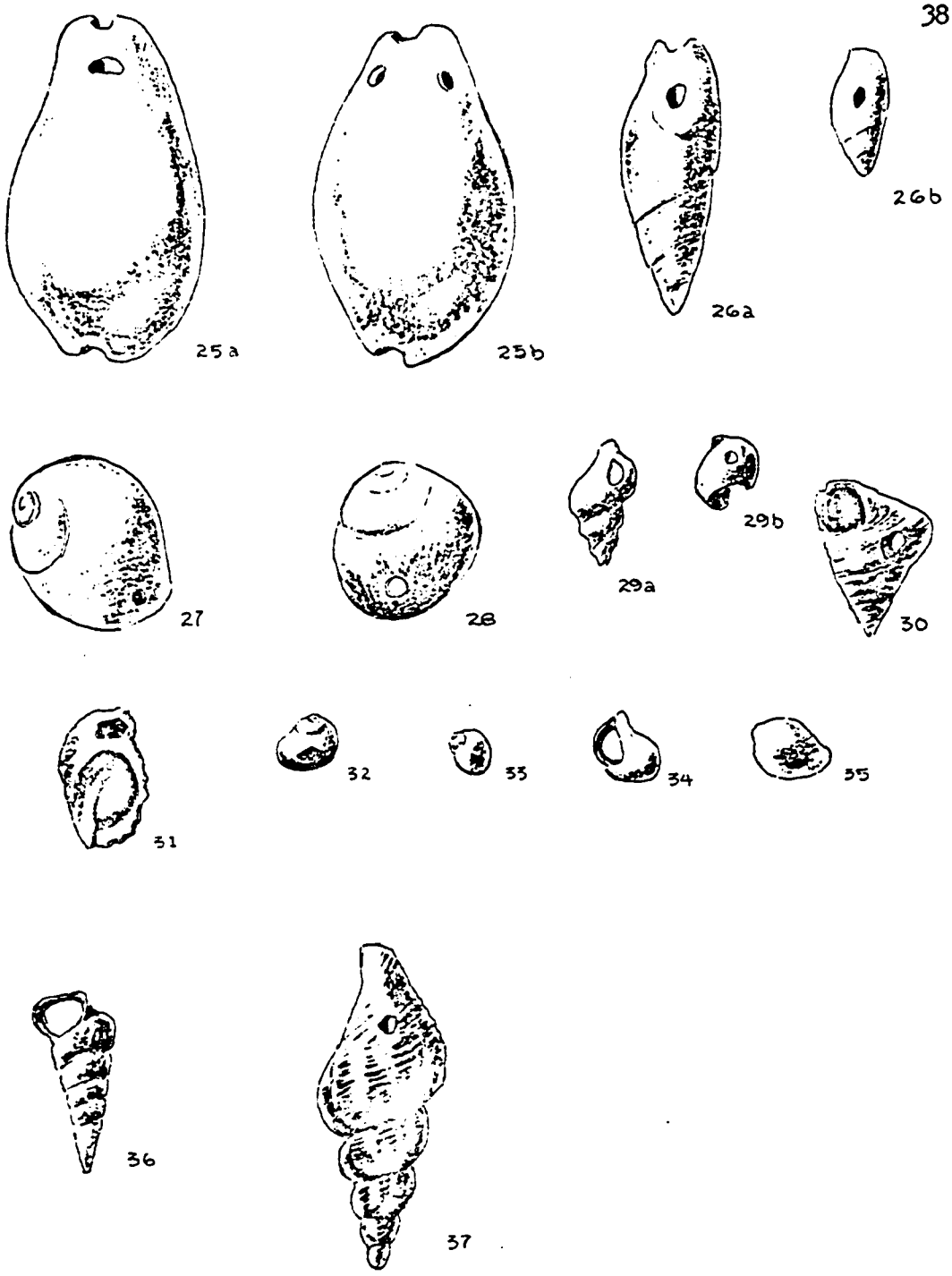

Plate 5: Shell Bead Types

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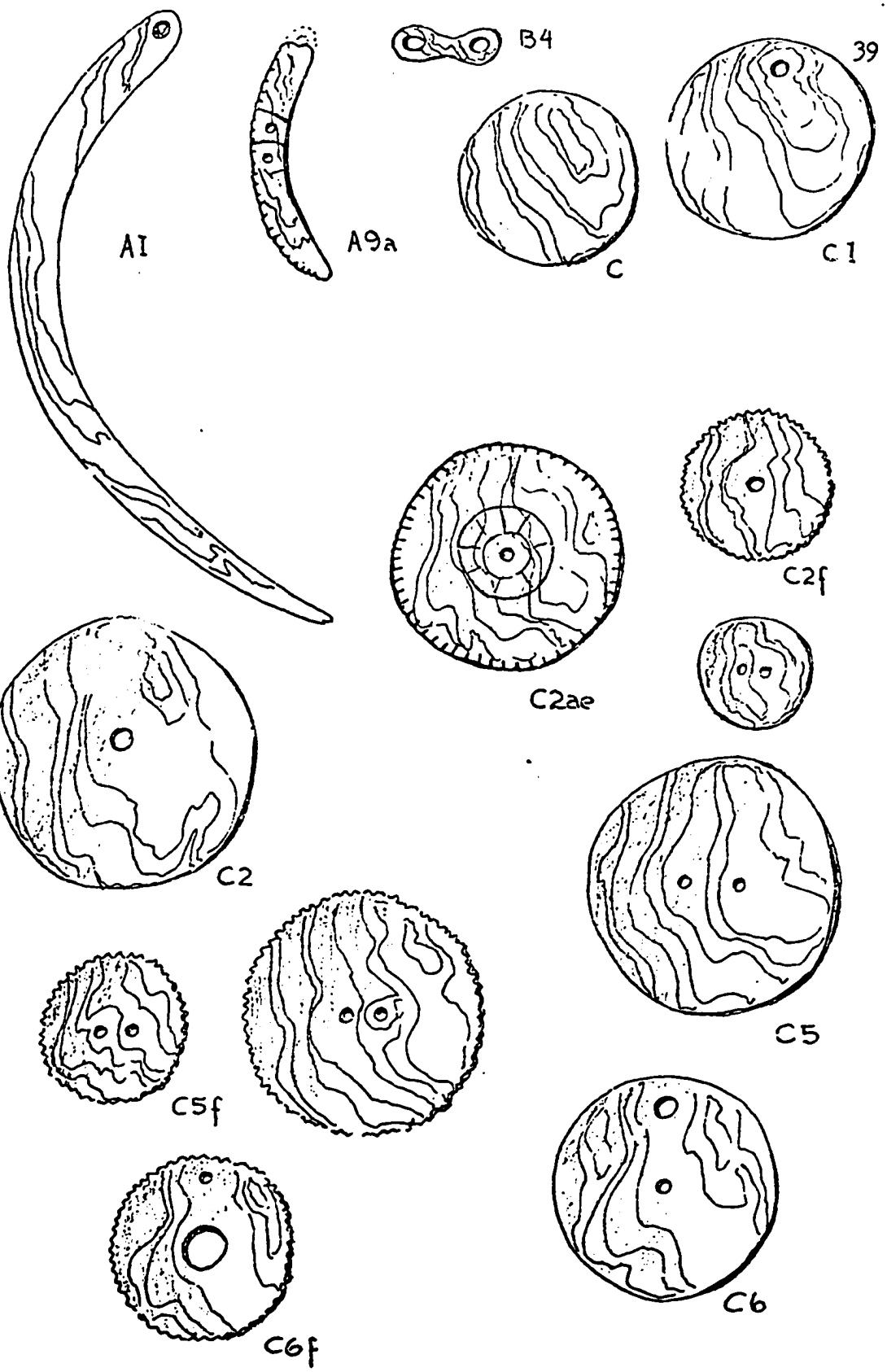

Plate 6: Haliotis Ornament Types

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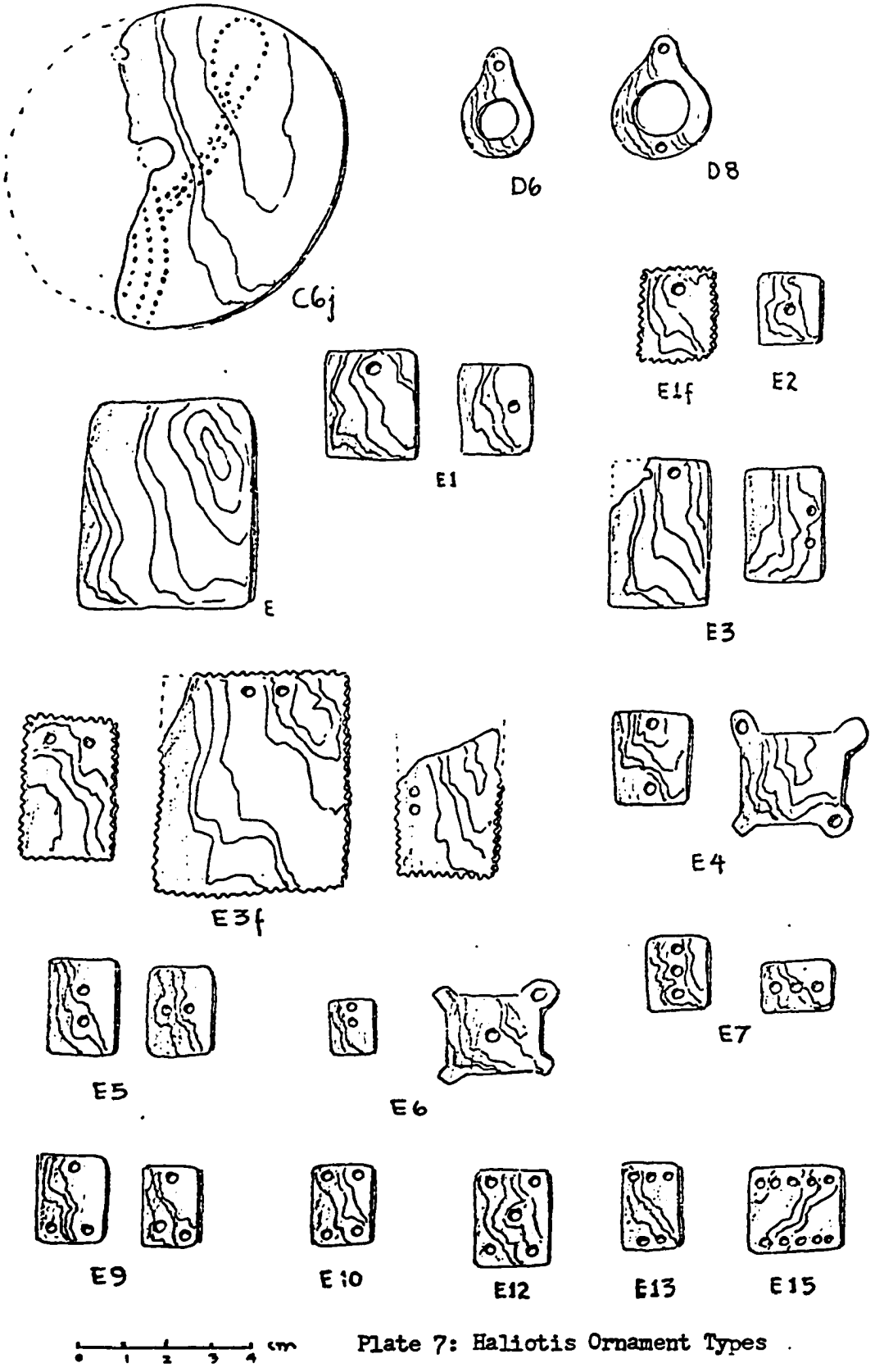

Plate 7: Haliotis Ornament Types

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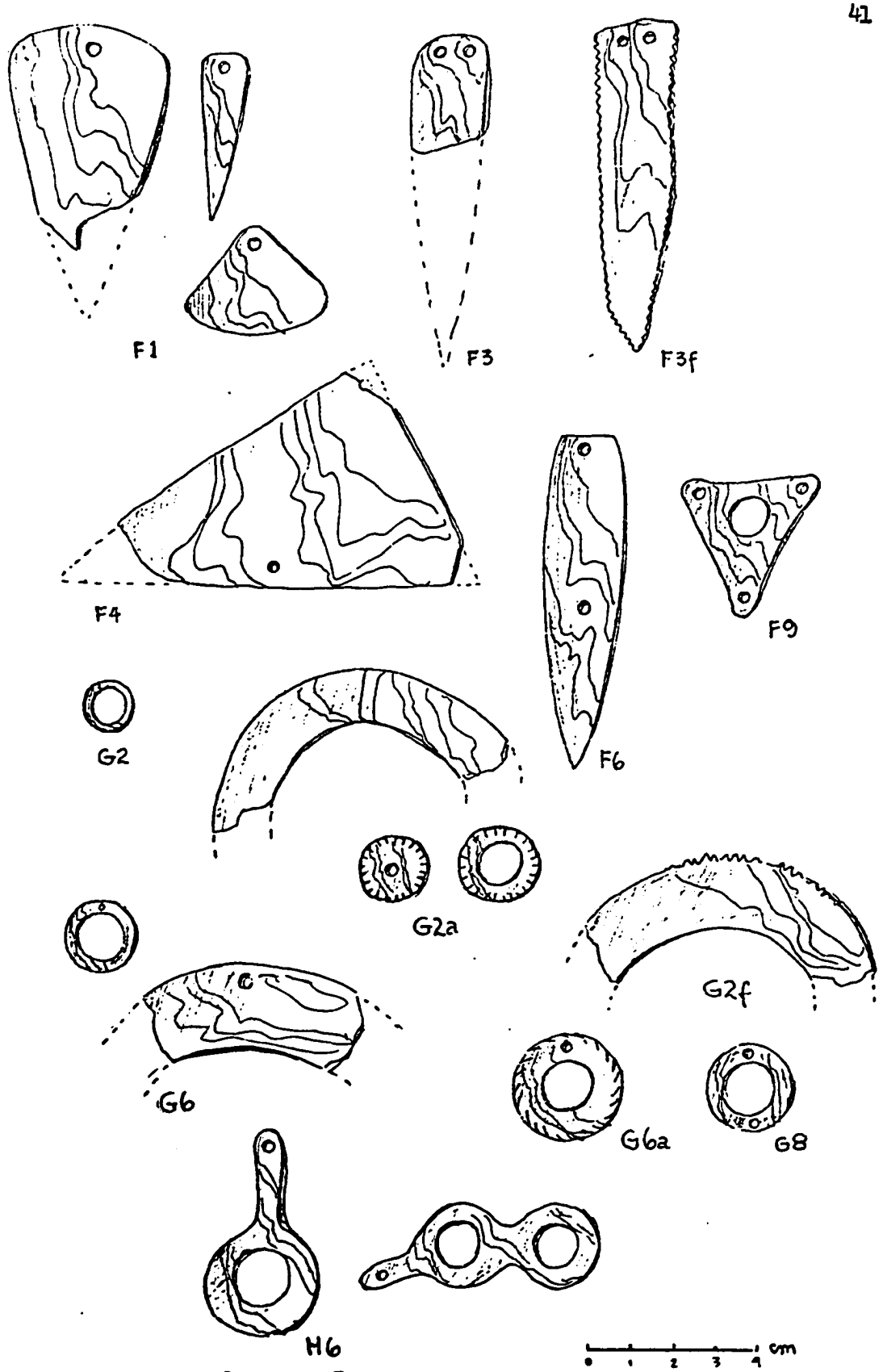

Plate 8: Haliotis Ornament Types

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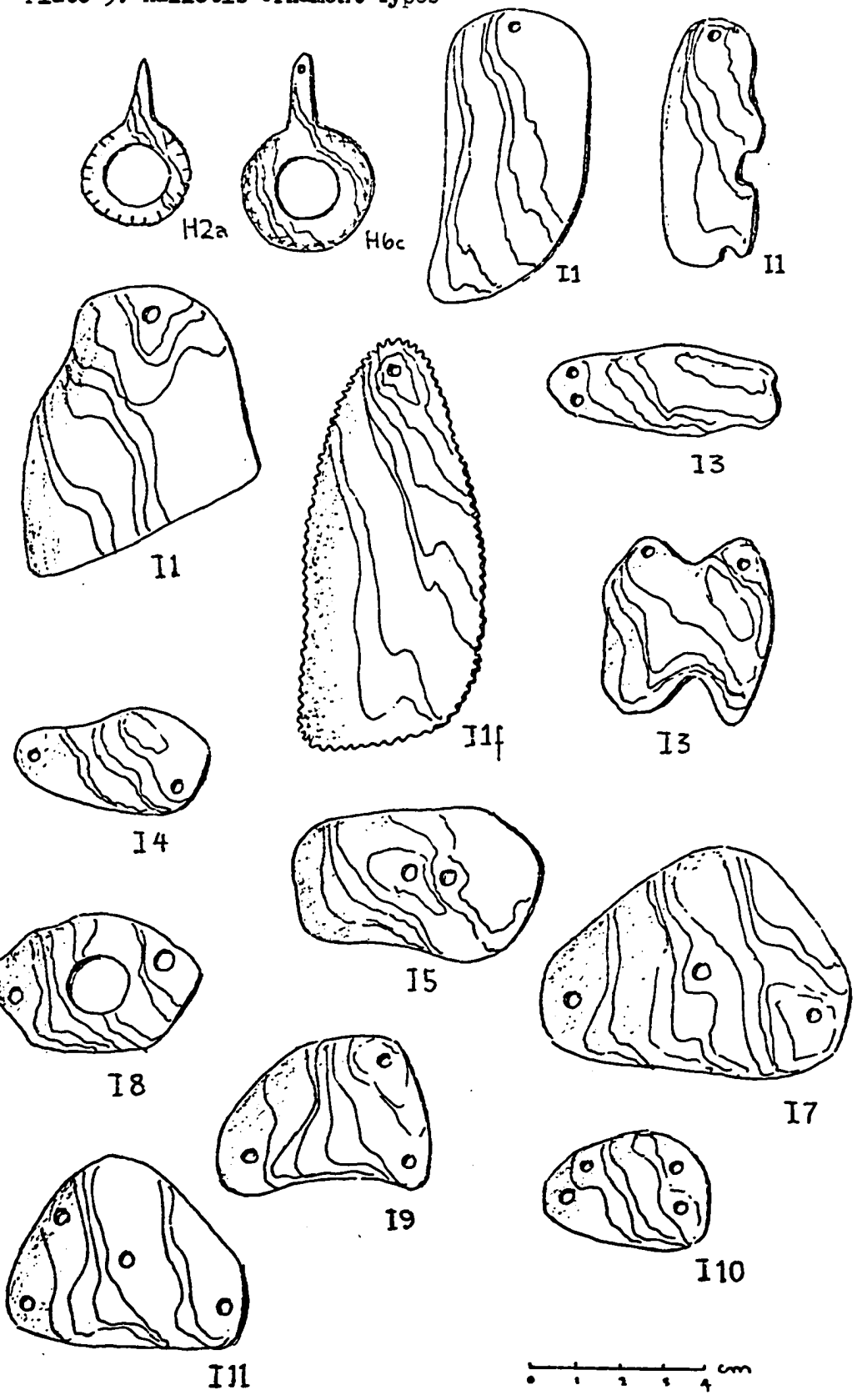
Plate 9: Haliotis Ornament Types



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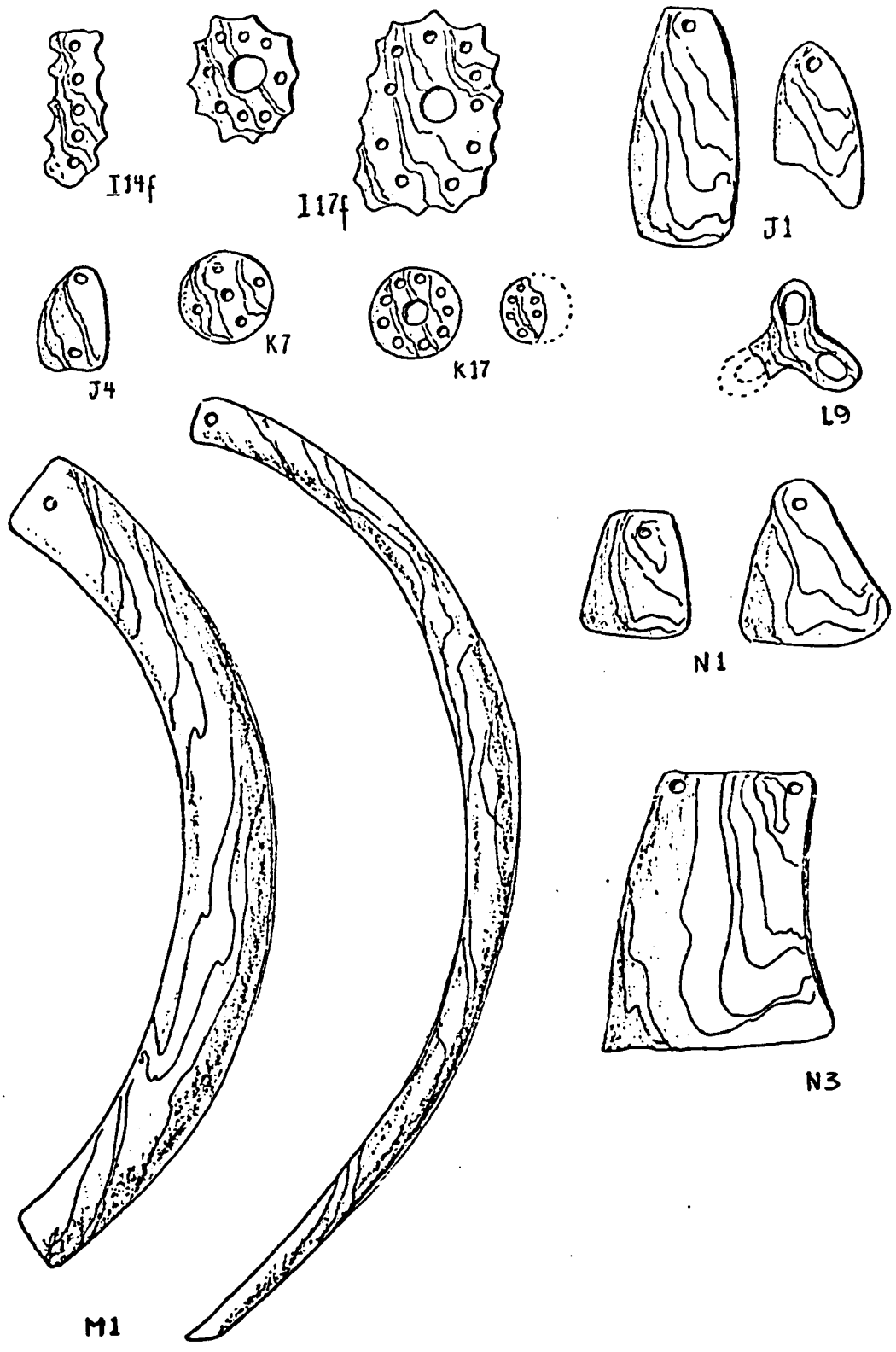

Plate 10: Haliotis Ornament Types

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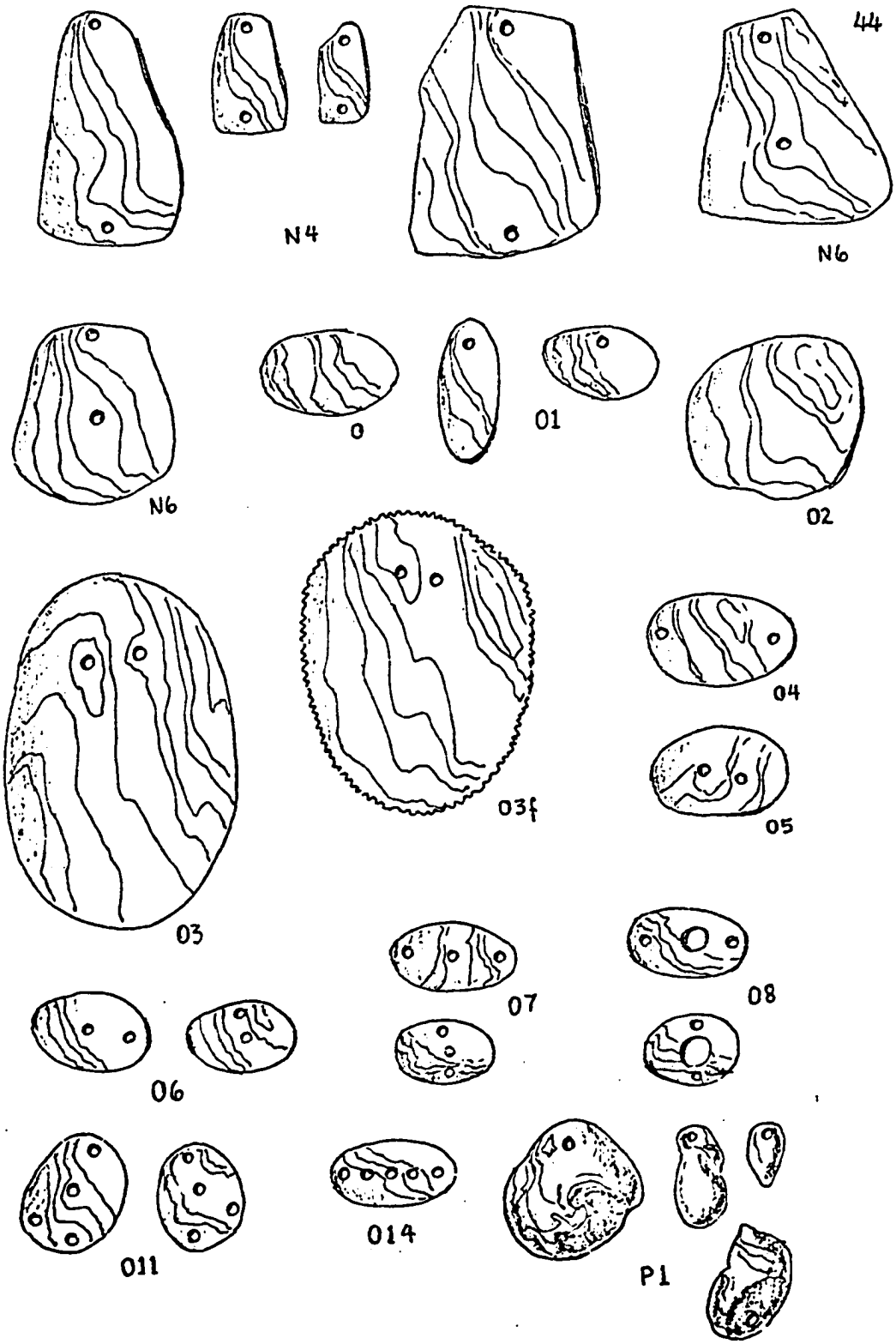

Plate 11: Haliotis Ornament Types

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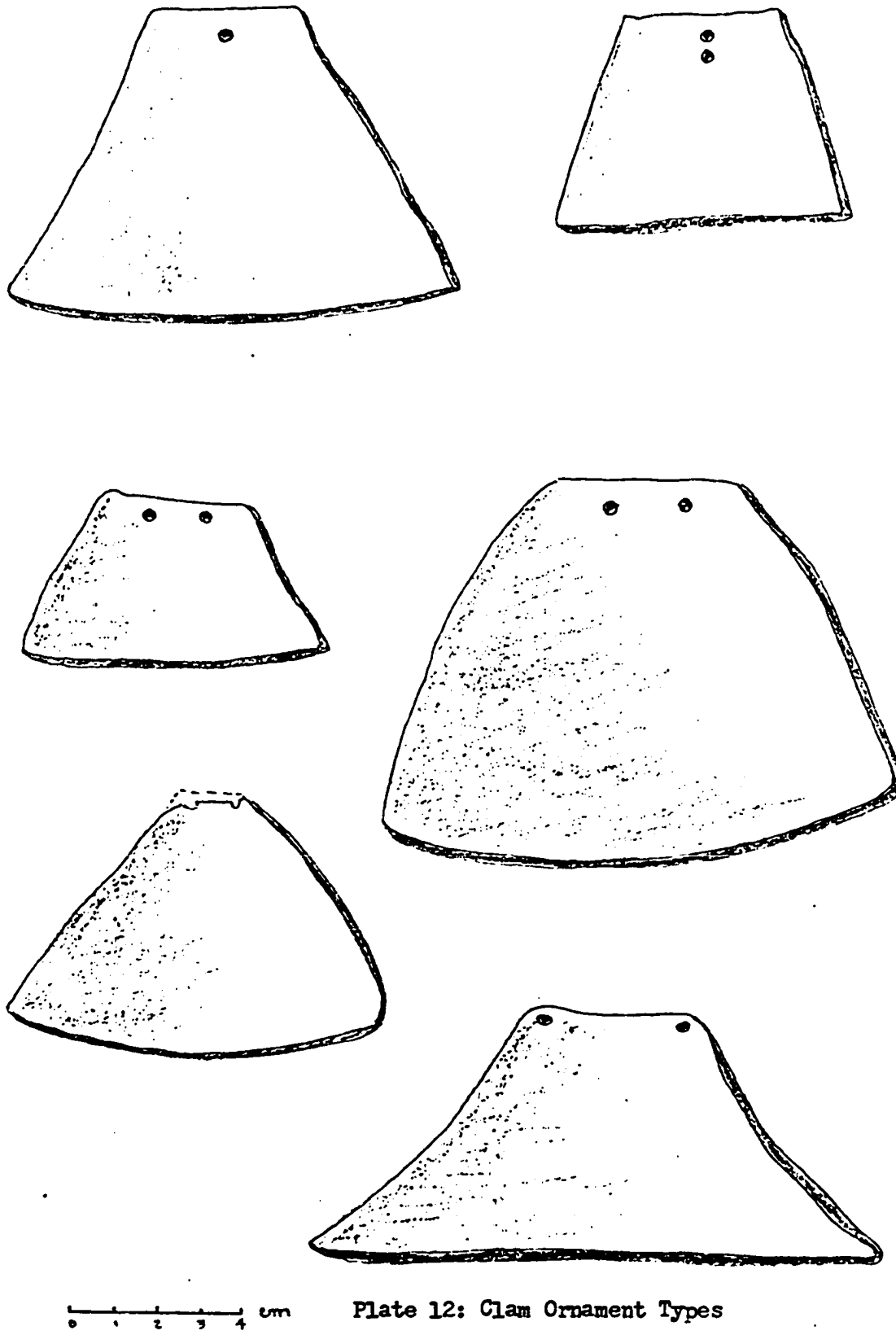

Plate 12: Clam Ornament Types

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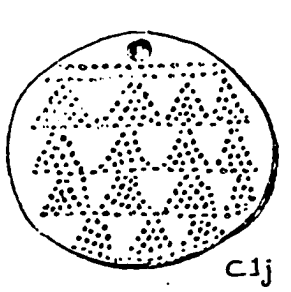
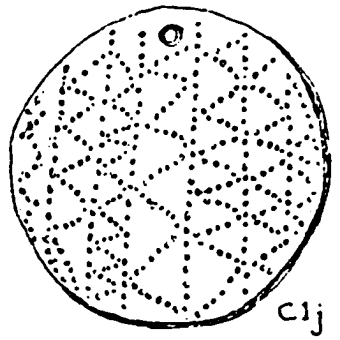
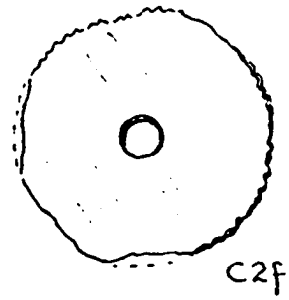
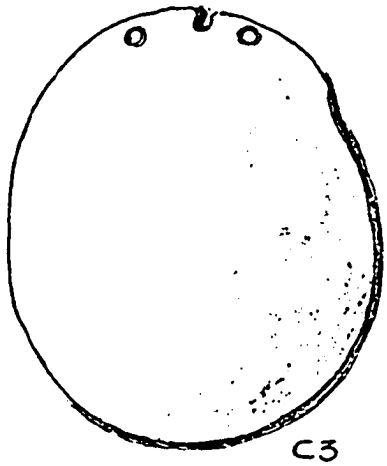
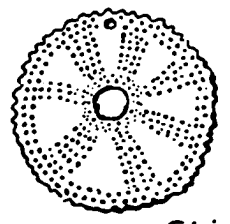
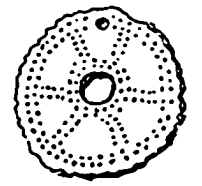


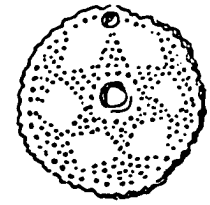


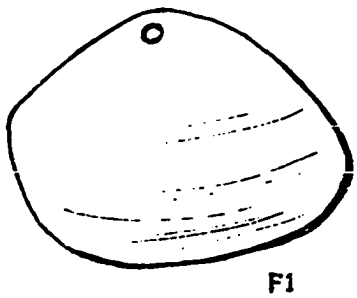


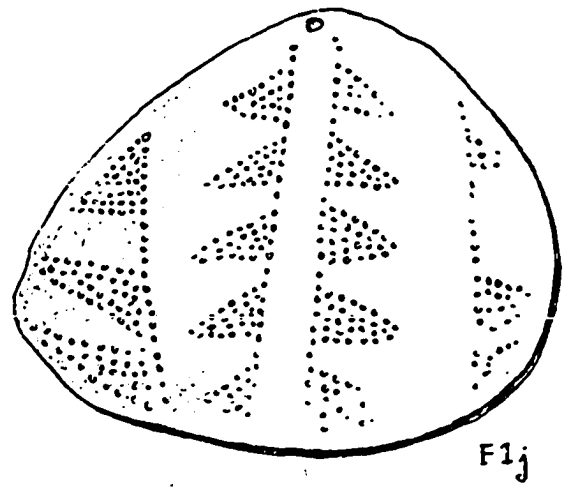












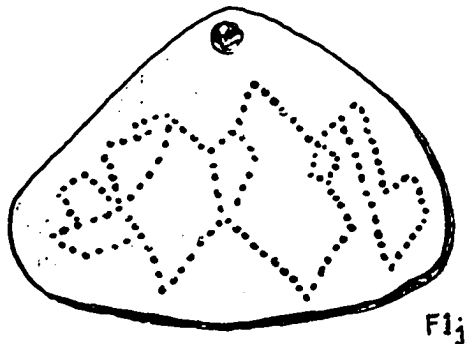
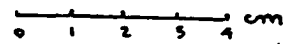


Plate 13: Clam Ornament Types



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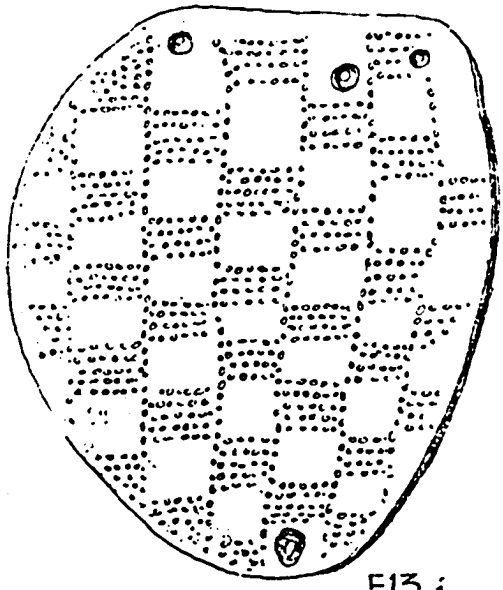

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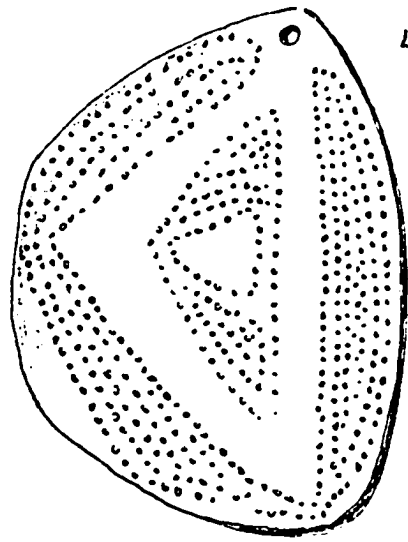

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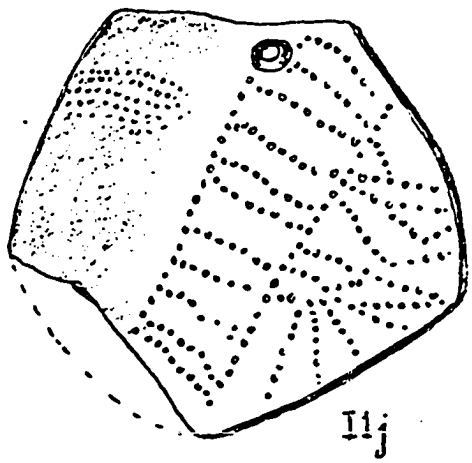

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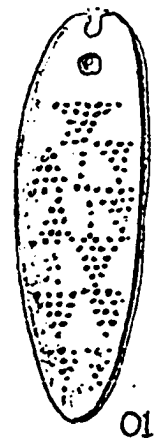

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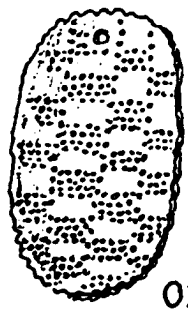

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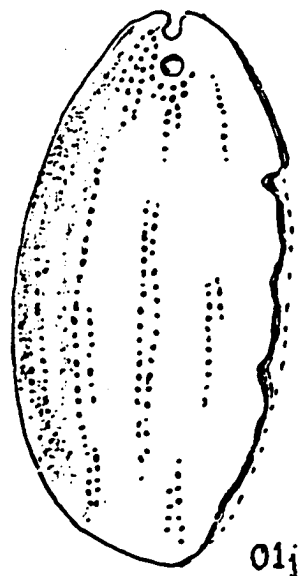

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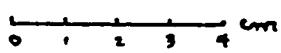
Plate 14: Clam Ornament Types



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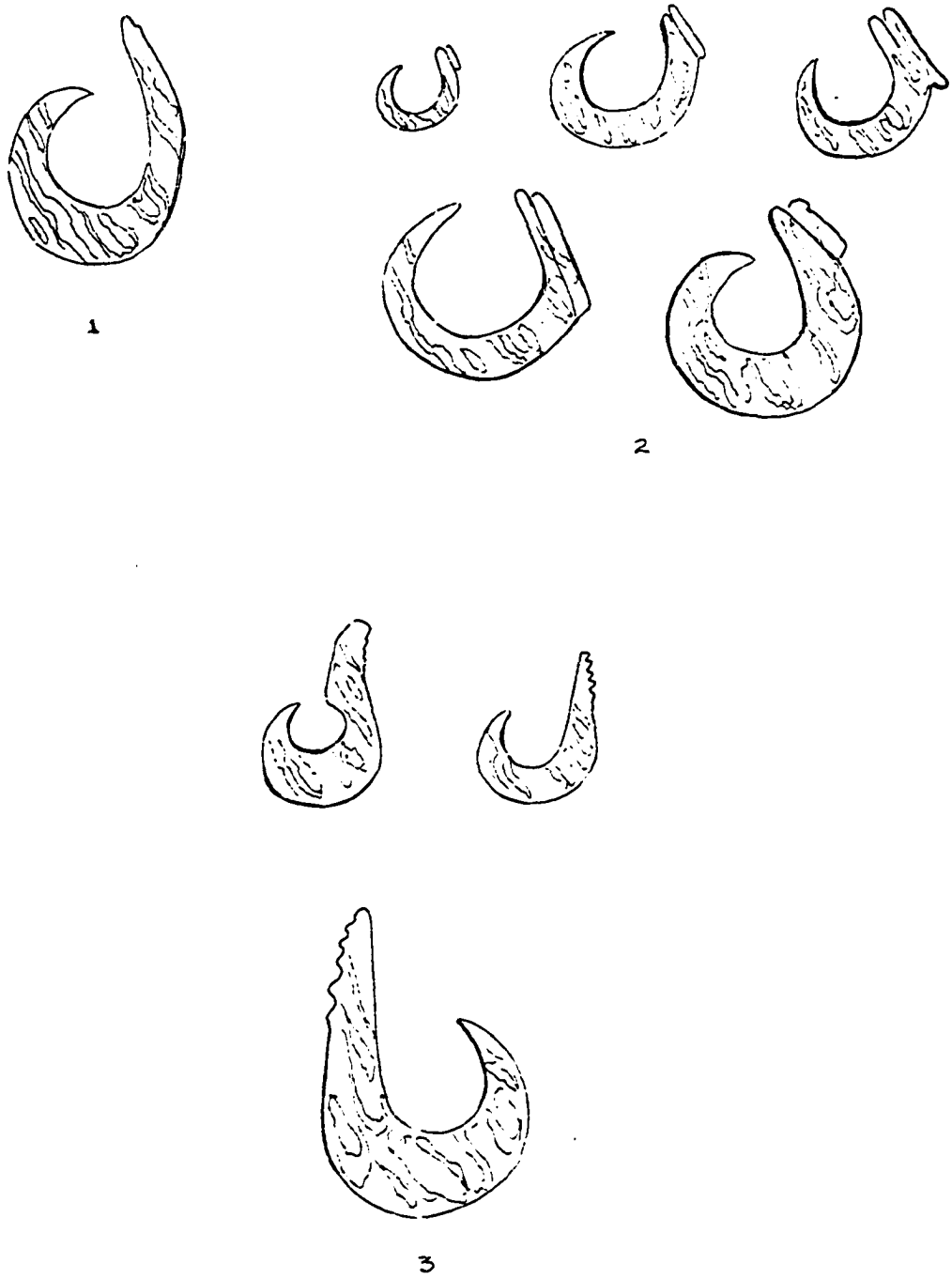

Plate 15: Shell Fishhook Types

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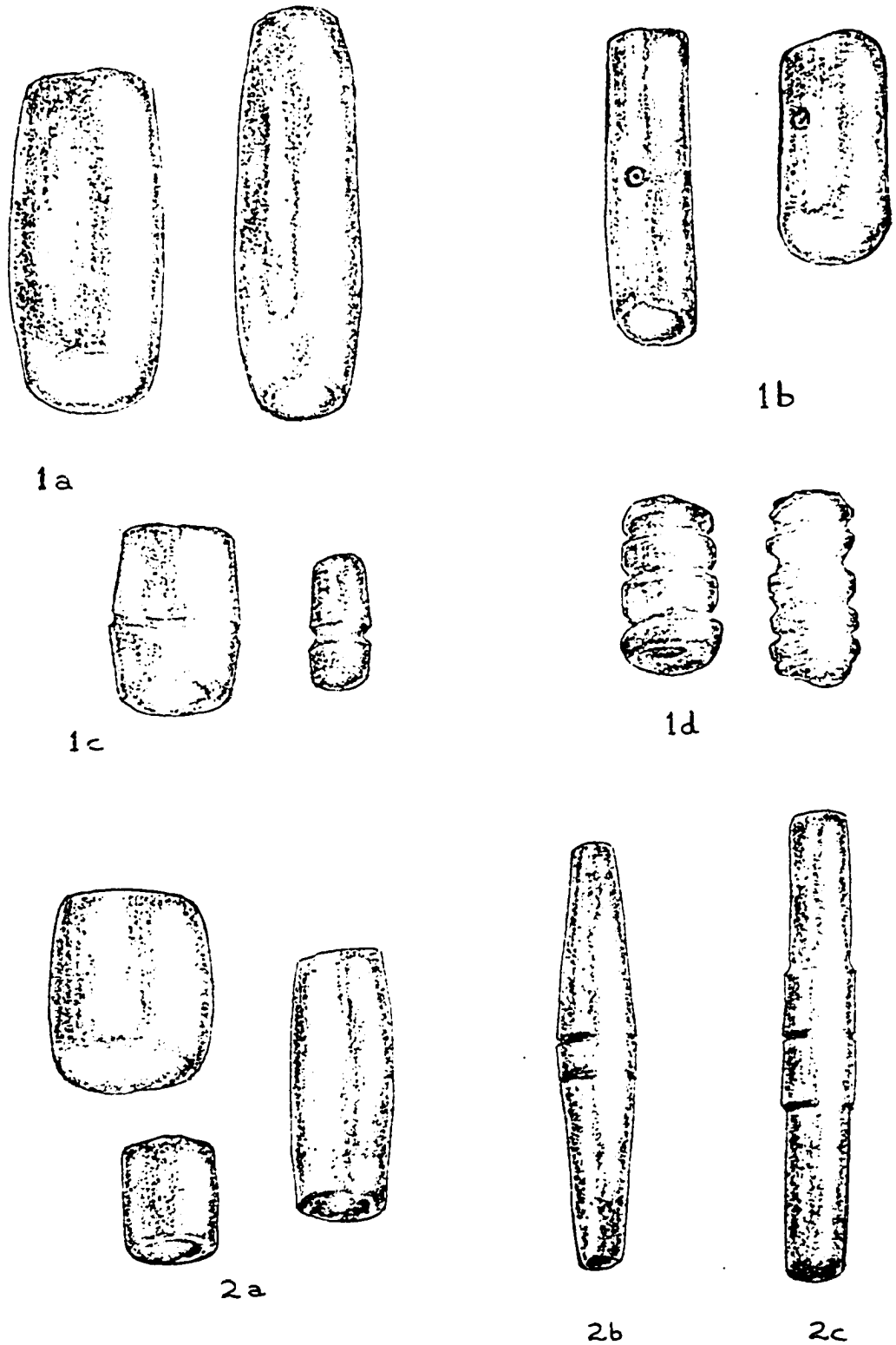

Plate 16: Steatite Bead Types

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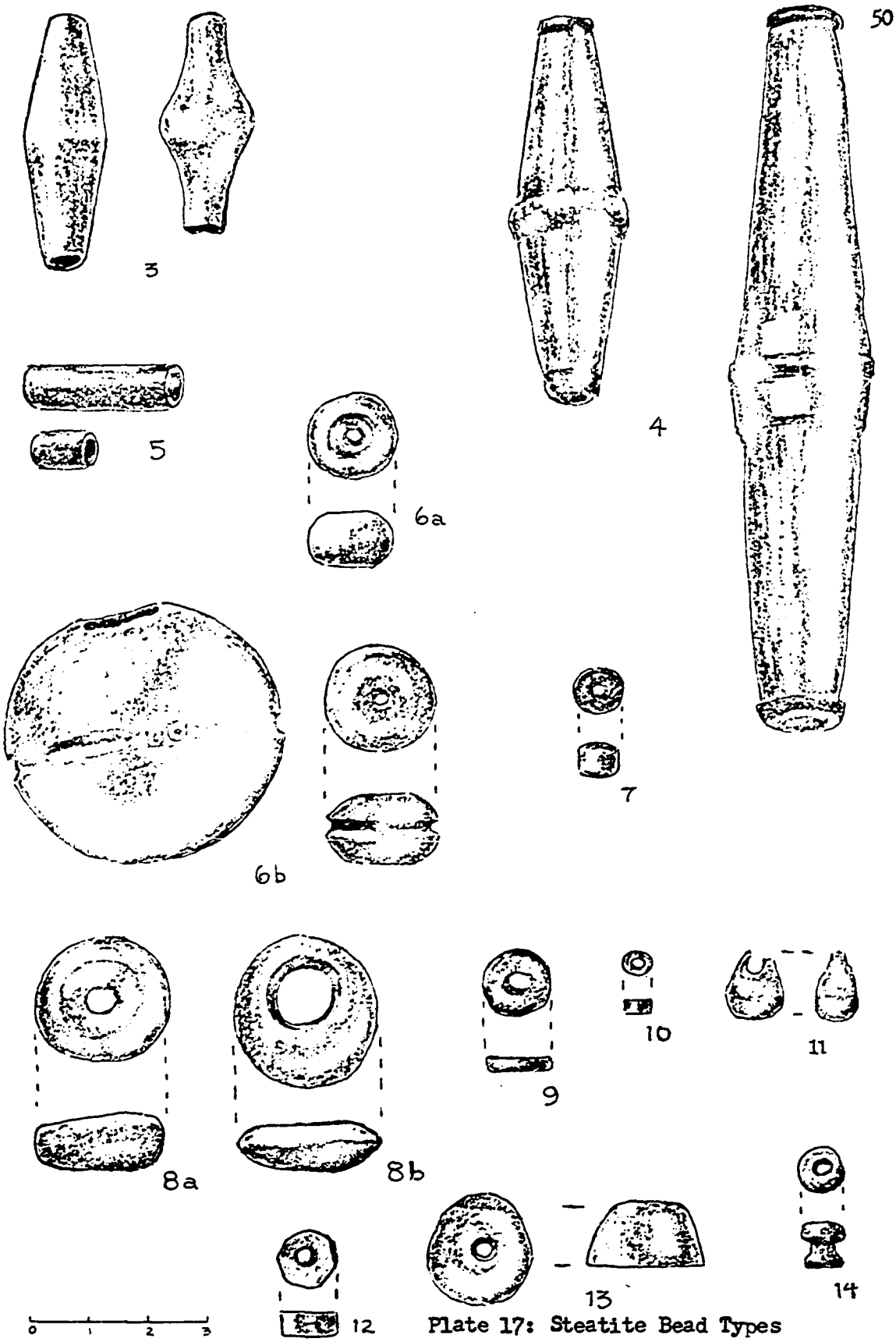

Plate 17: Steatite Bead Types

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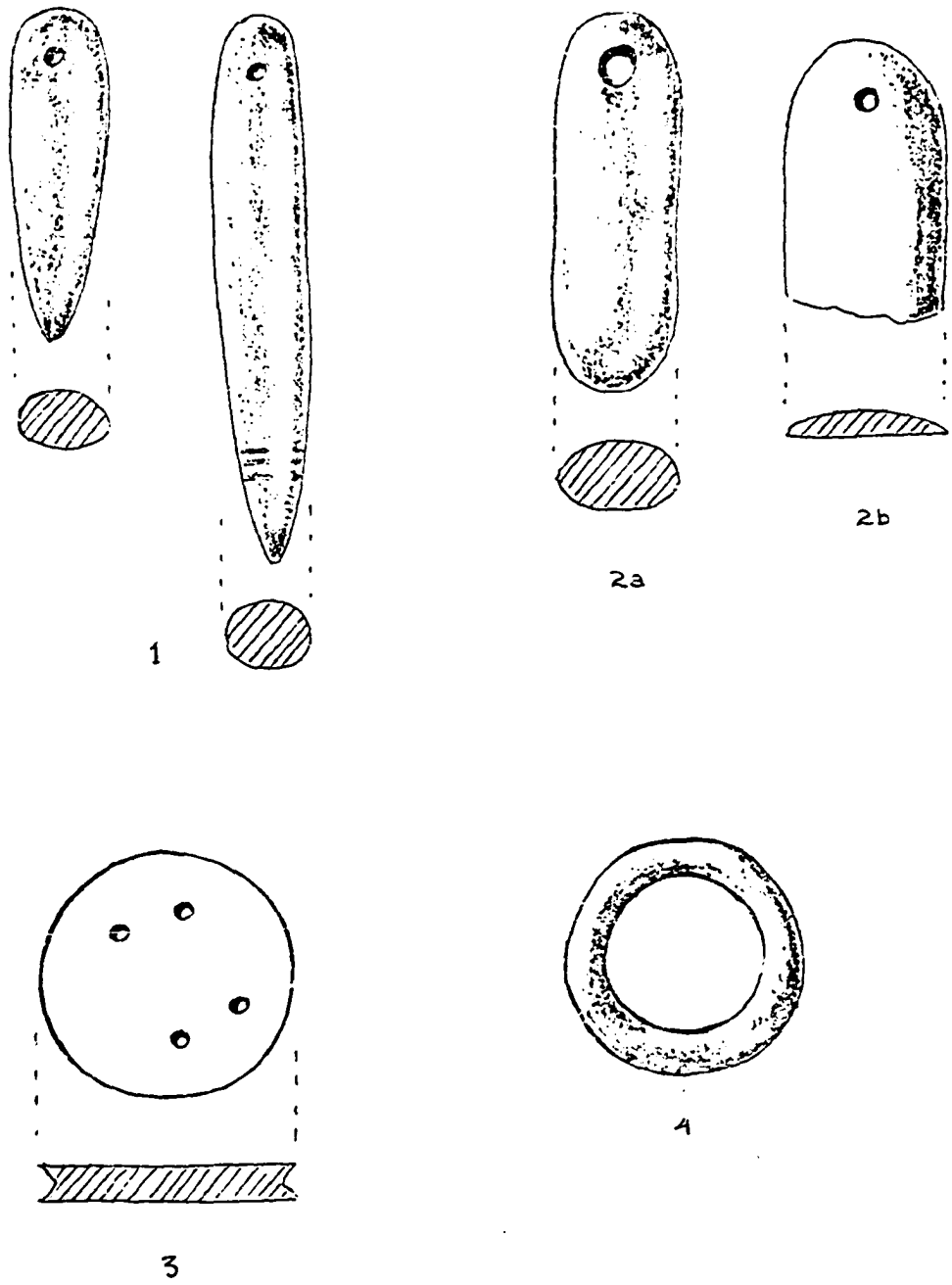

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Plate 18: Steatite Ornament Types

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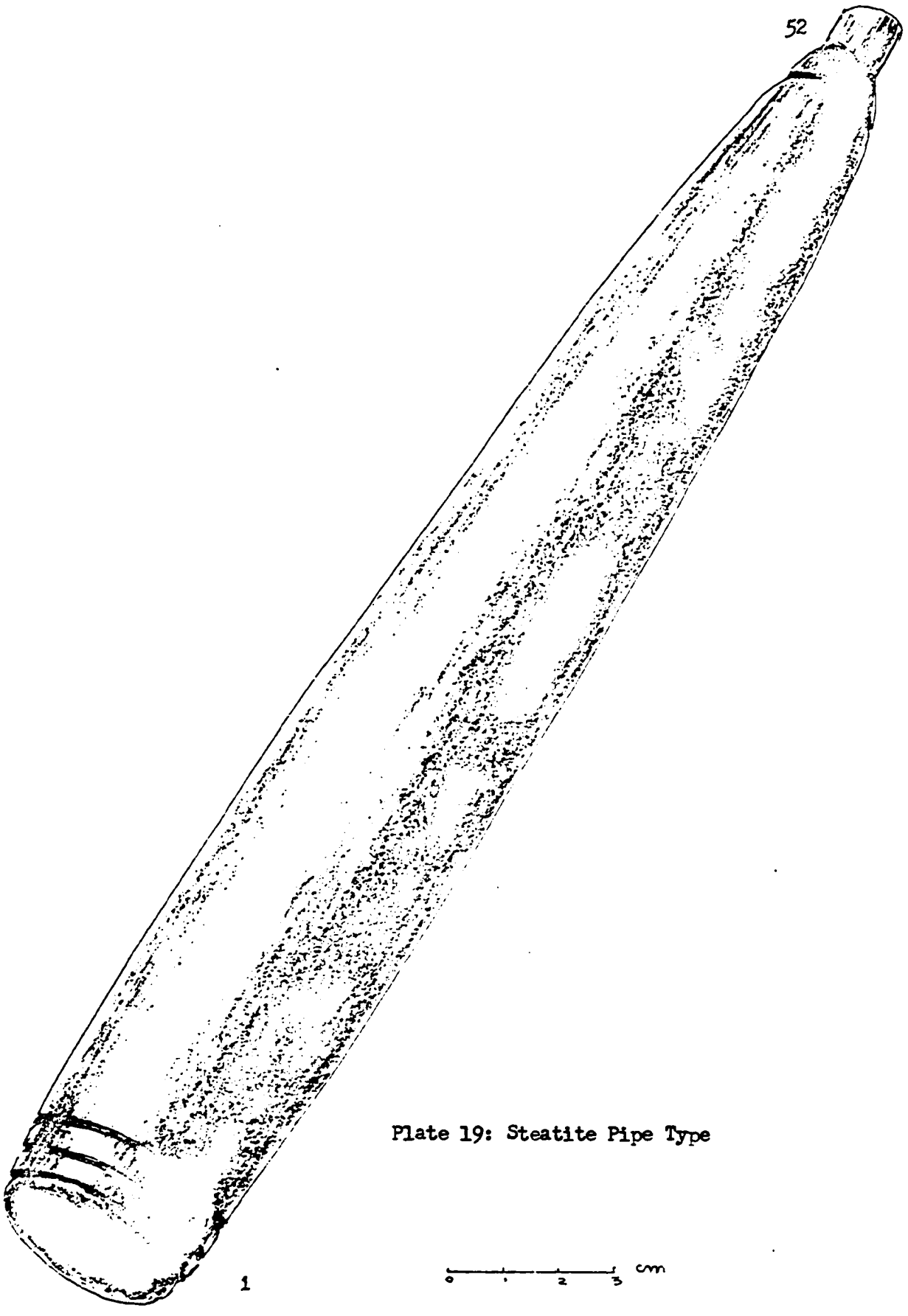

Plate 19: Steatite Pipe Type

6a

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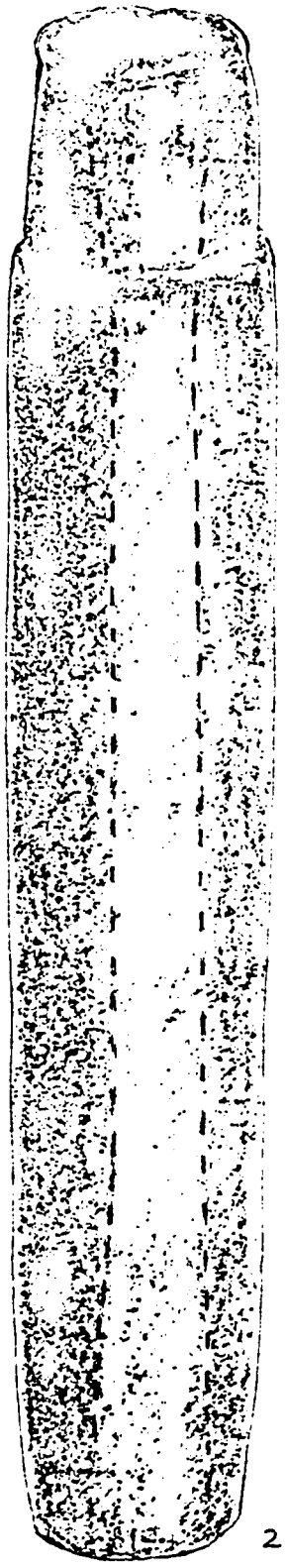
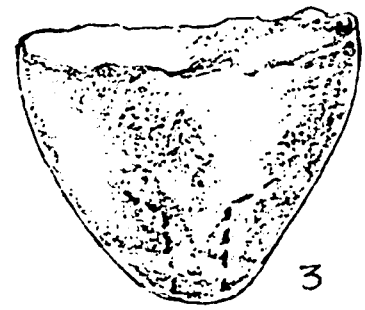




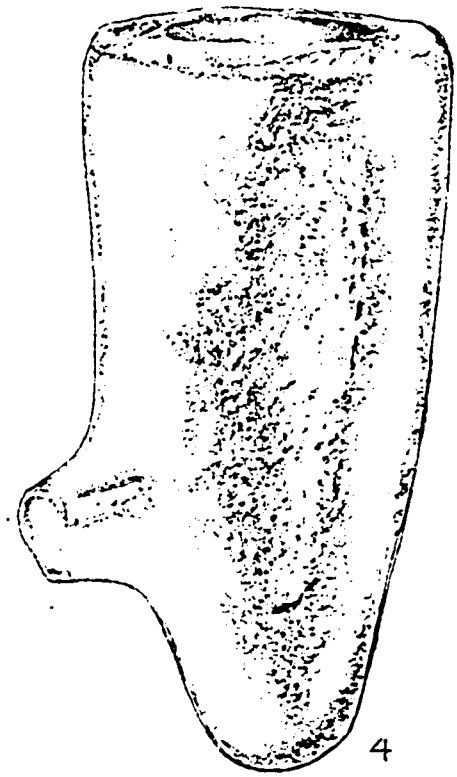
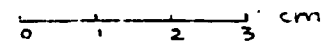


Plate 20: Steatite Pipe Type



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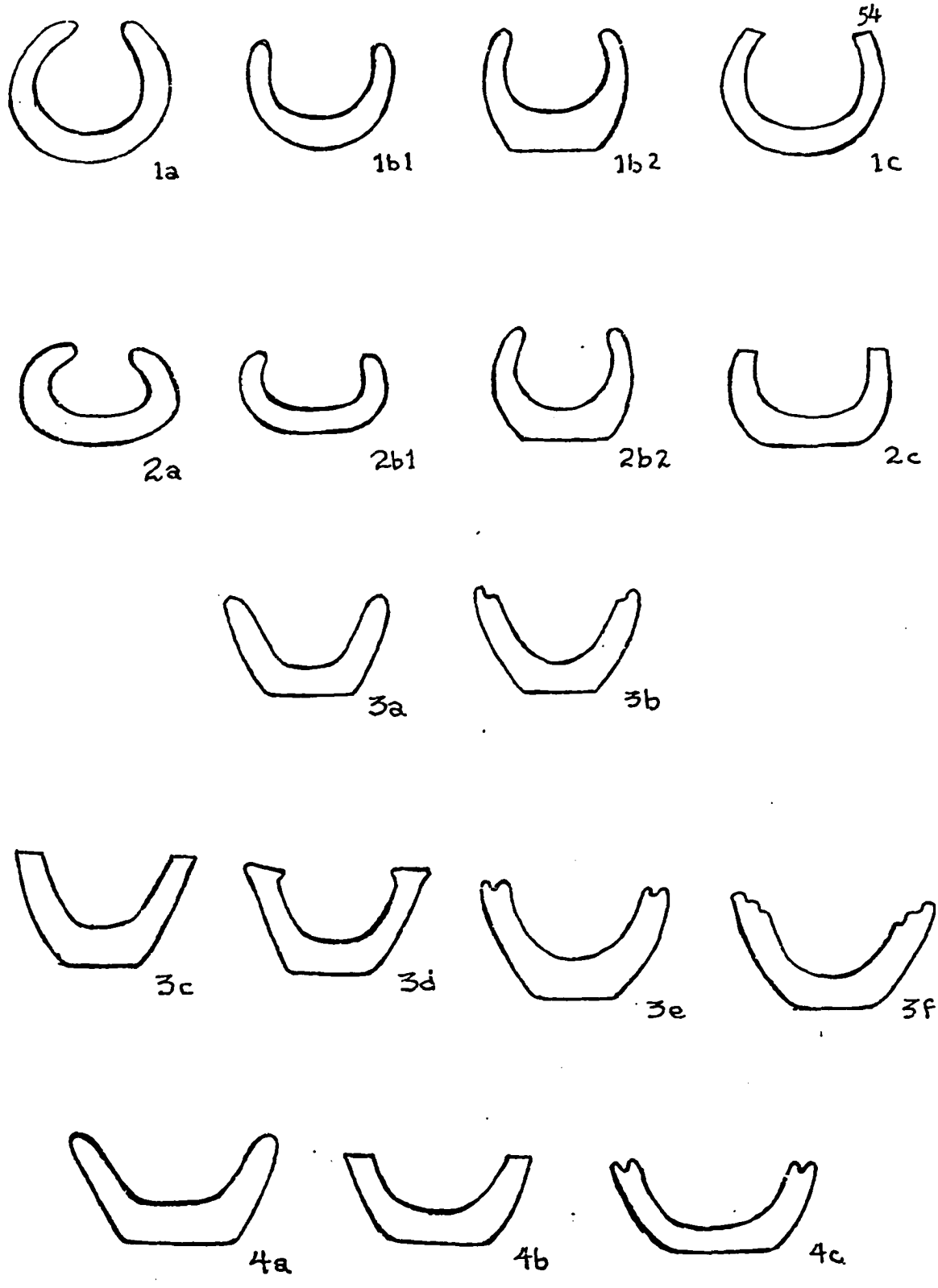

Plate 21: Stone Mortar Types

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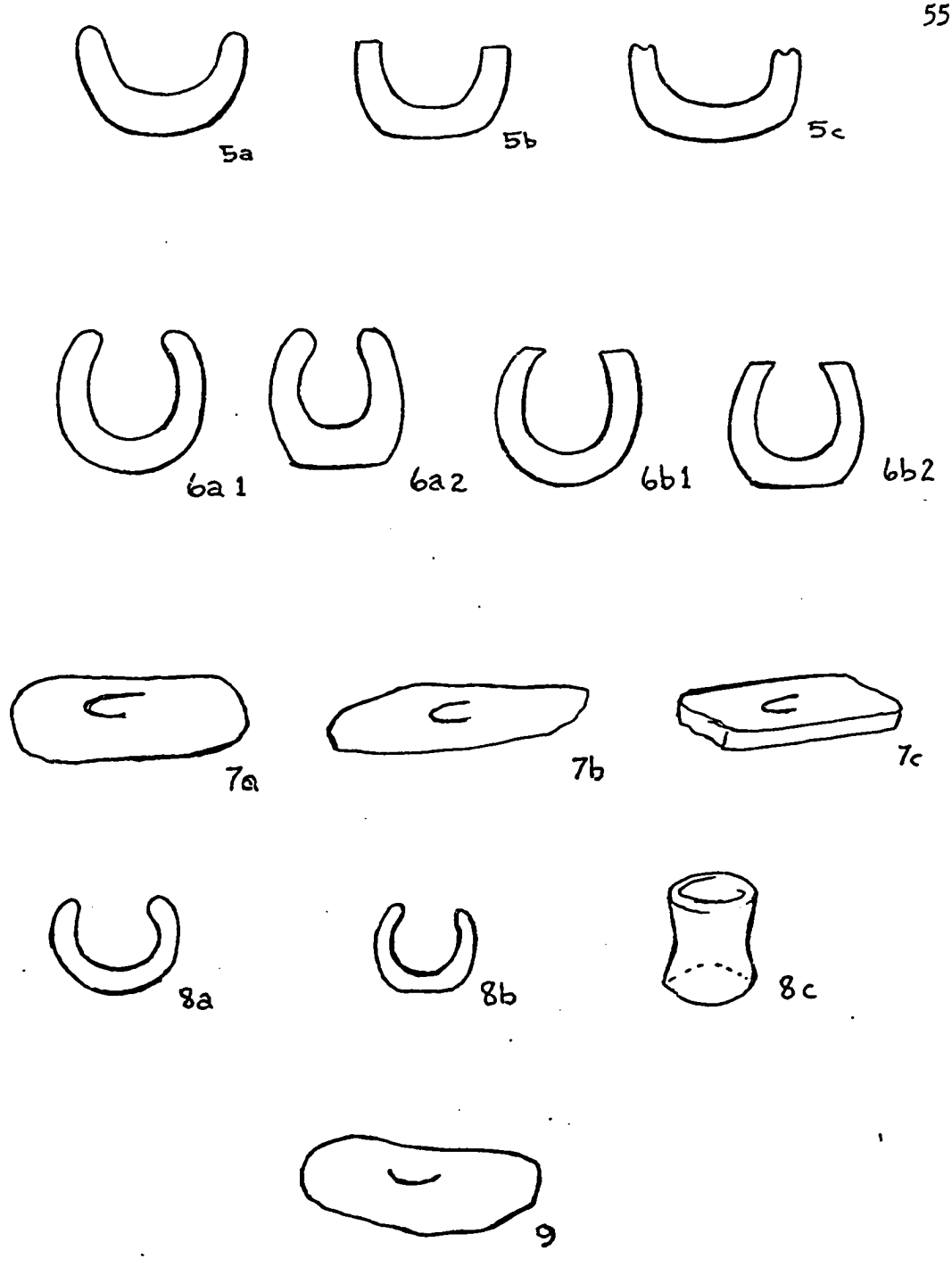

Plate 22: Stone Mortar Types

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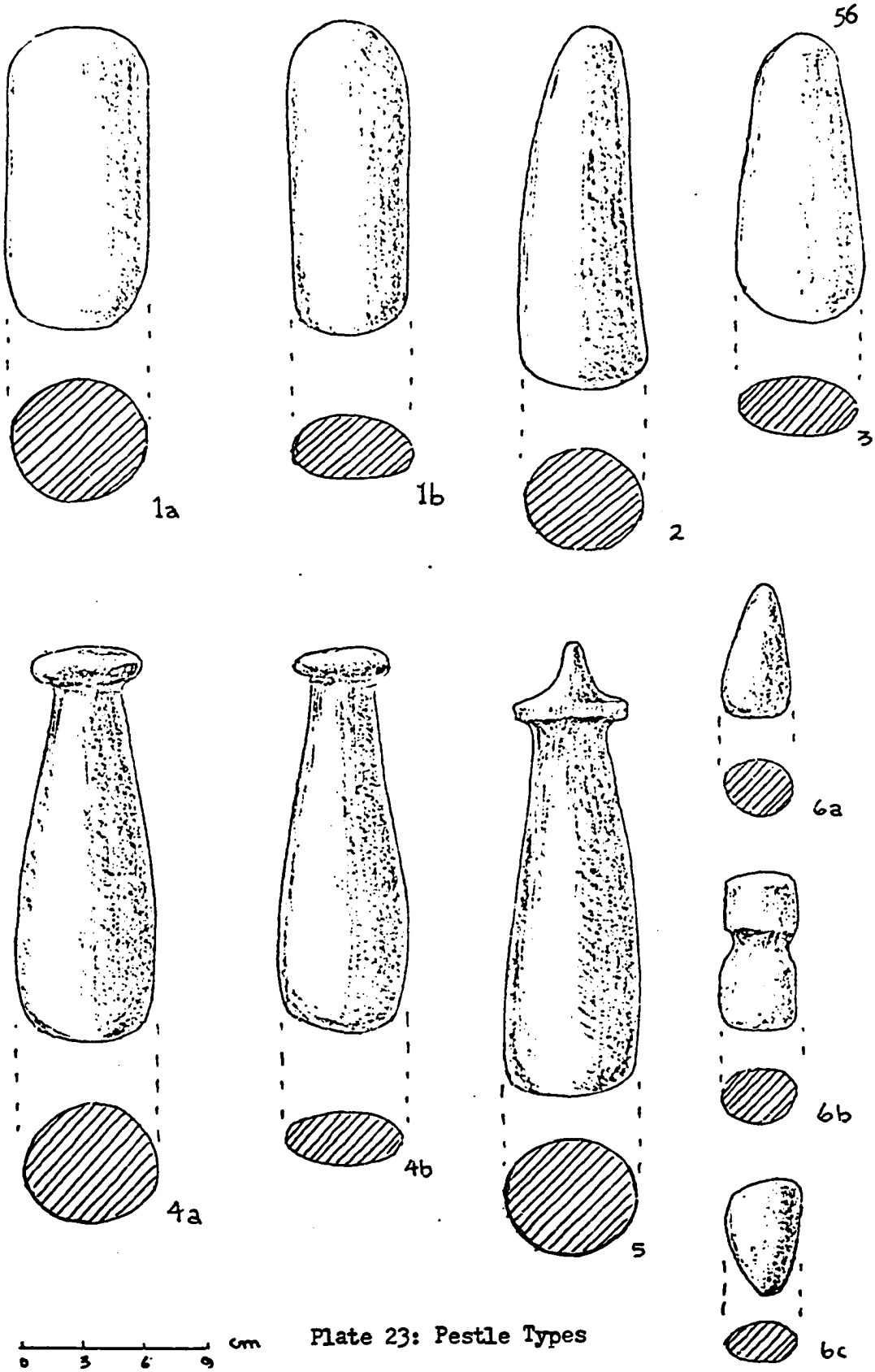

Plate 23: Pestle Types

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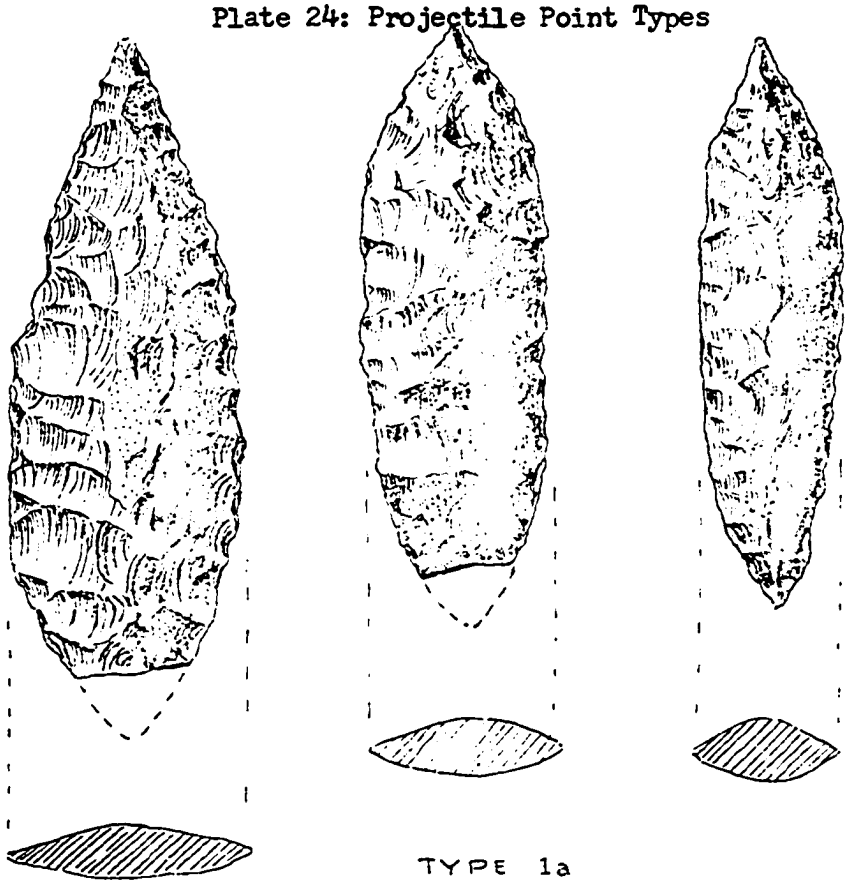
Plate 24: Projectile Point Types



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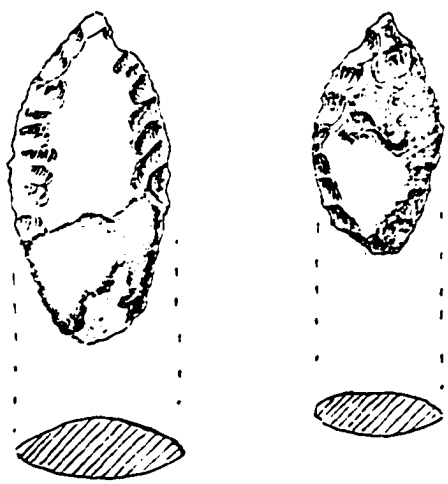

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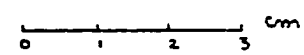

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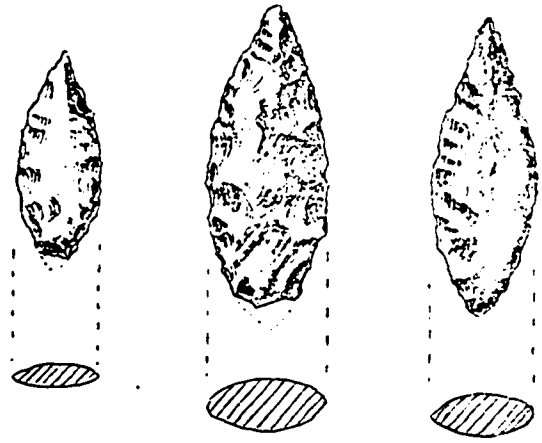
Plate 25: Projectile Point Types



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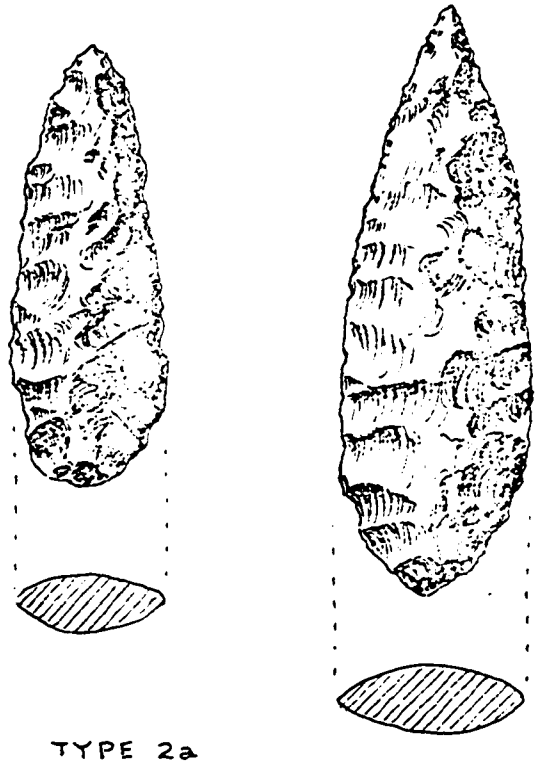

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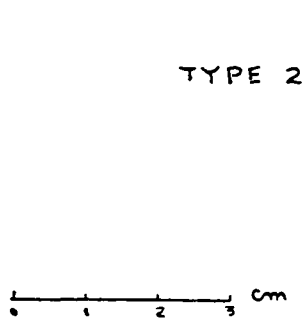

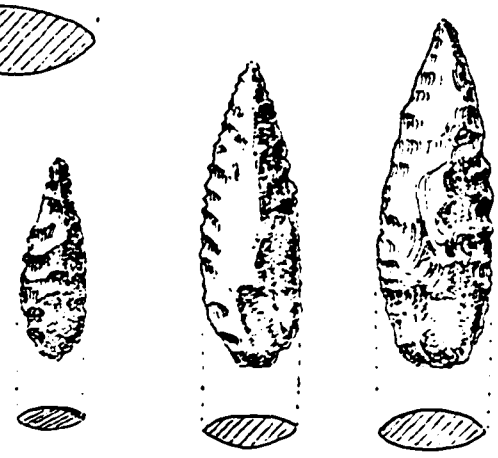

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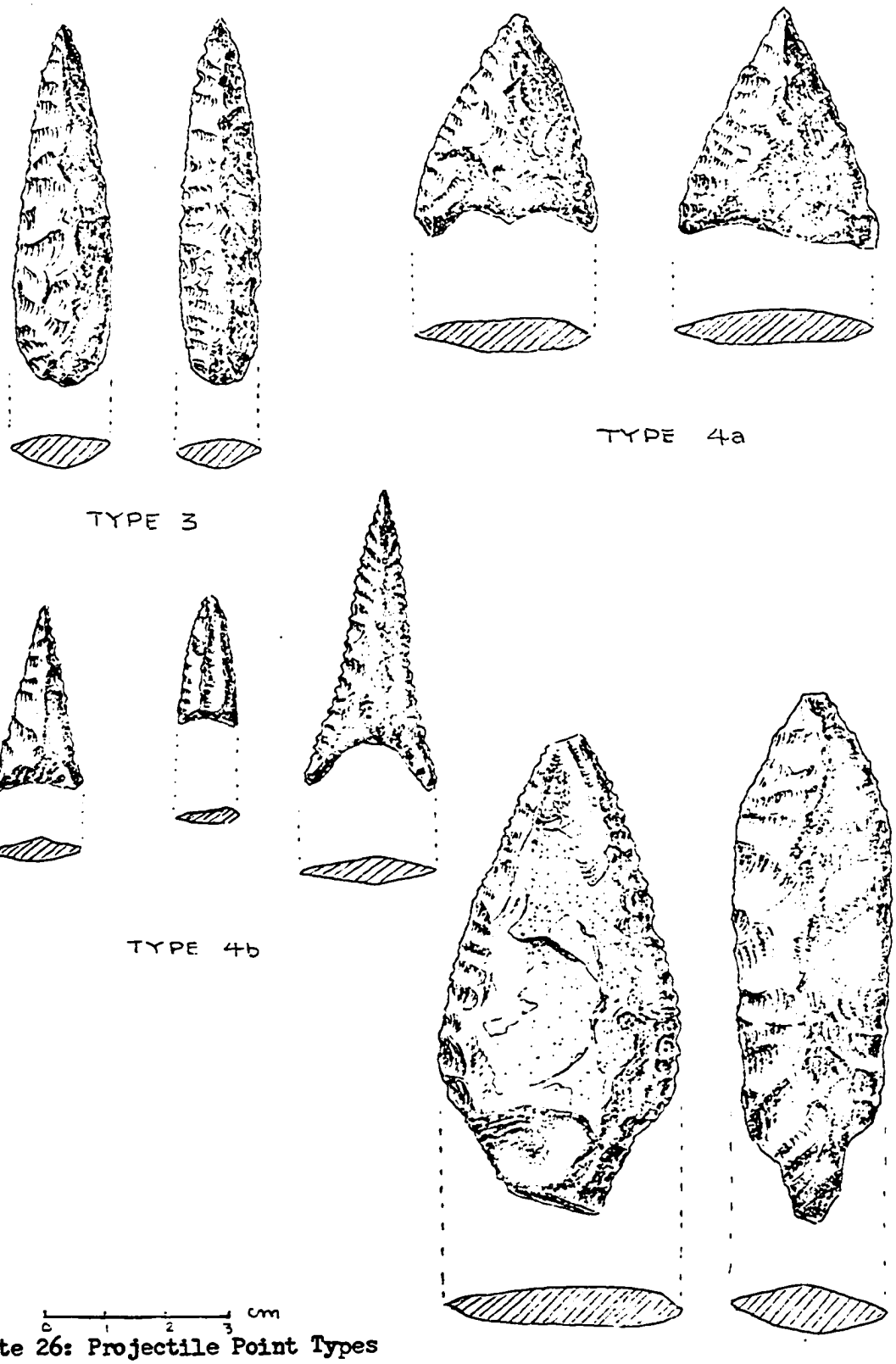

Plate 26: Projectile Point Types

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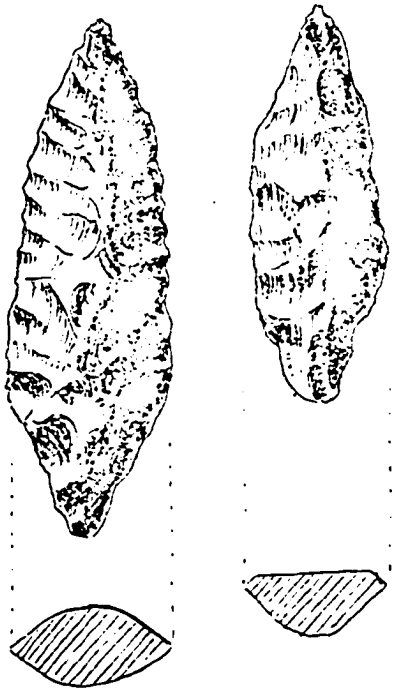
Plate 27: Projectile Point Types



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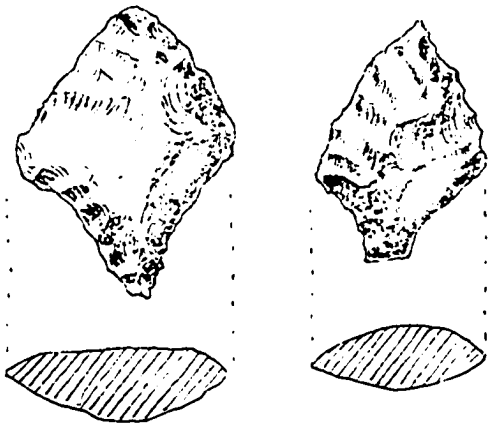

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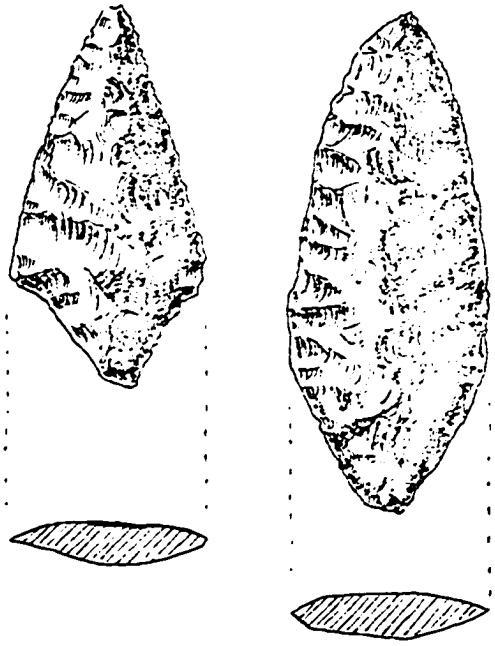

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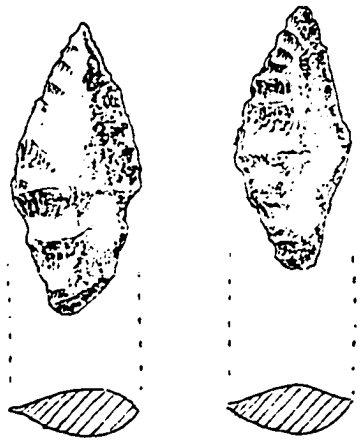

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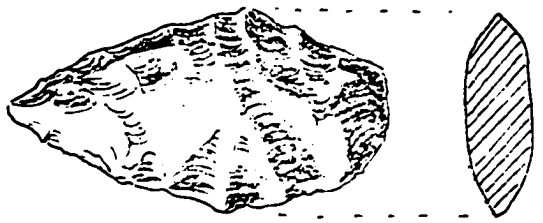

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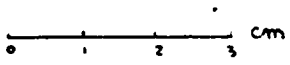

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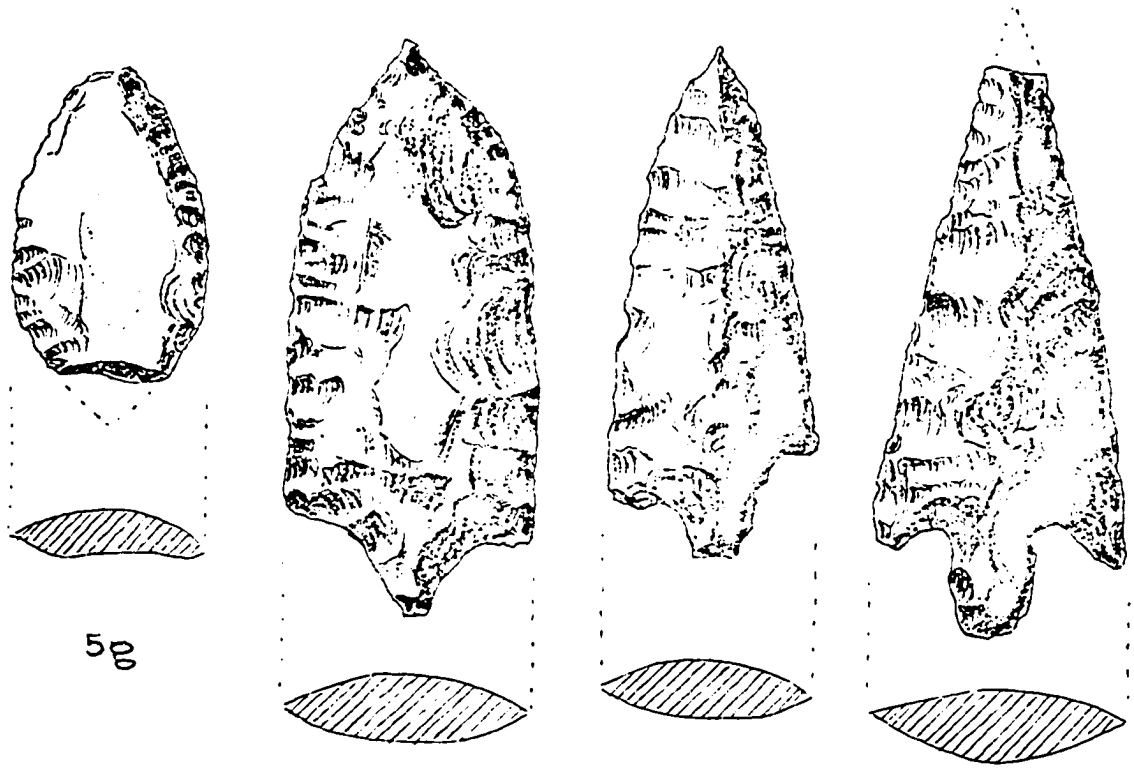
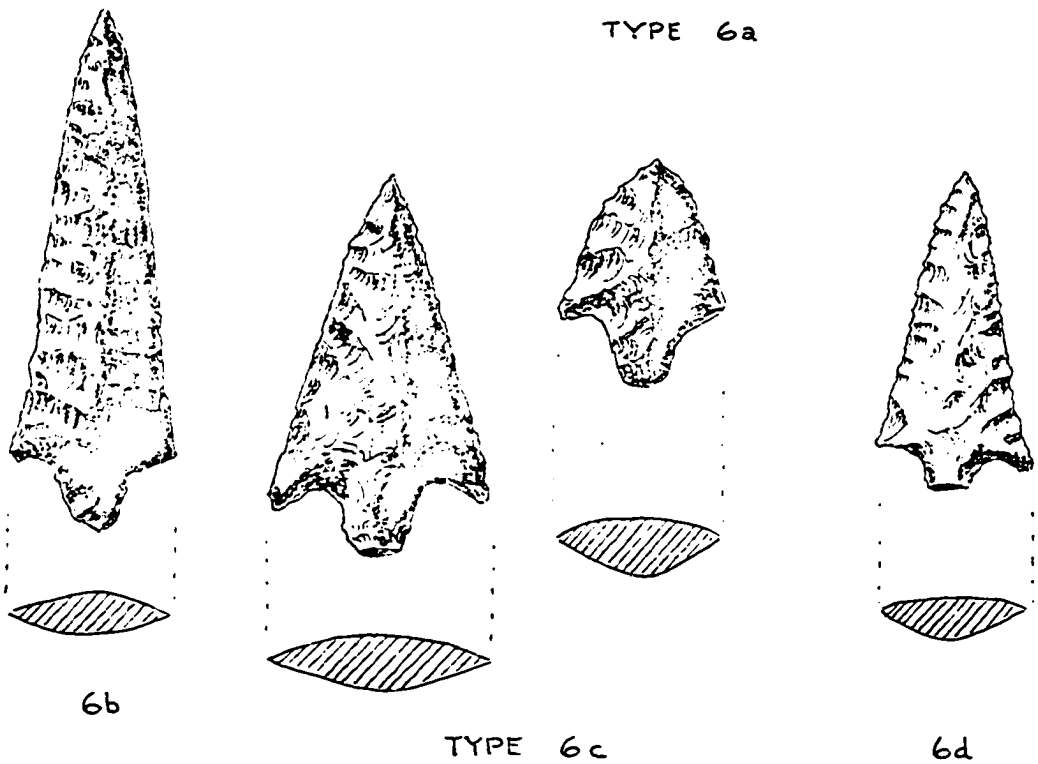
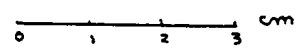




Ga **Plate 28: Projectile Point Types**



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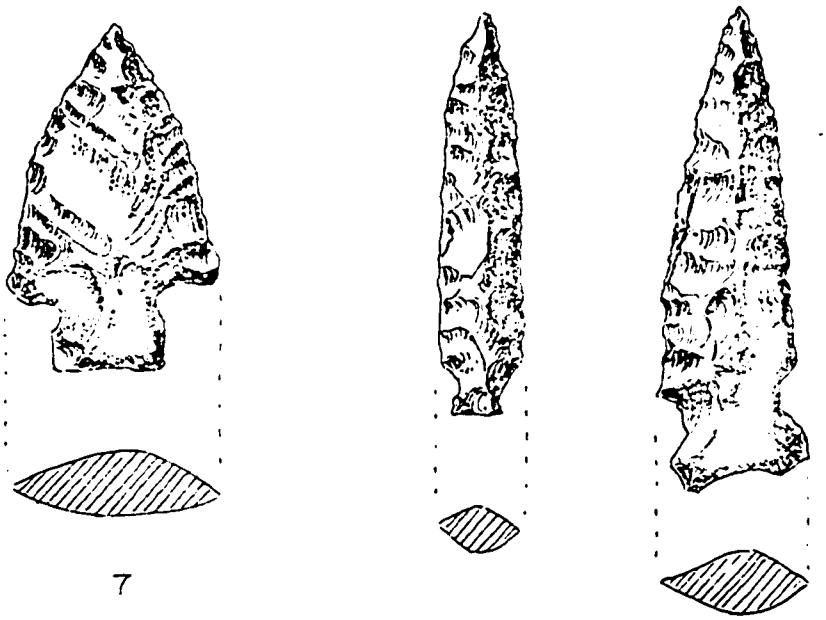


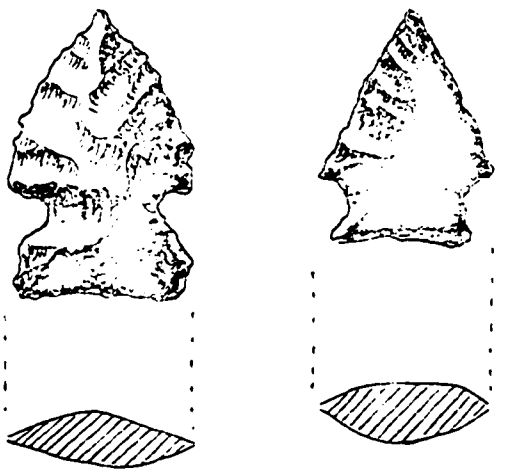
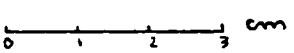


Plate 29: Projectile Point Types



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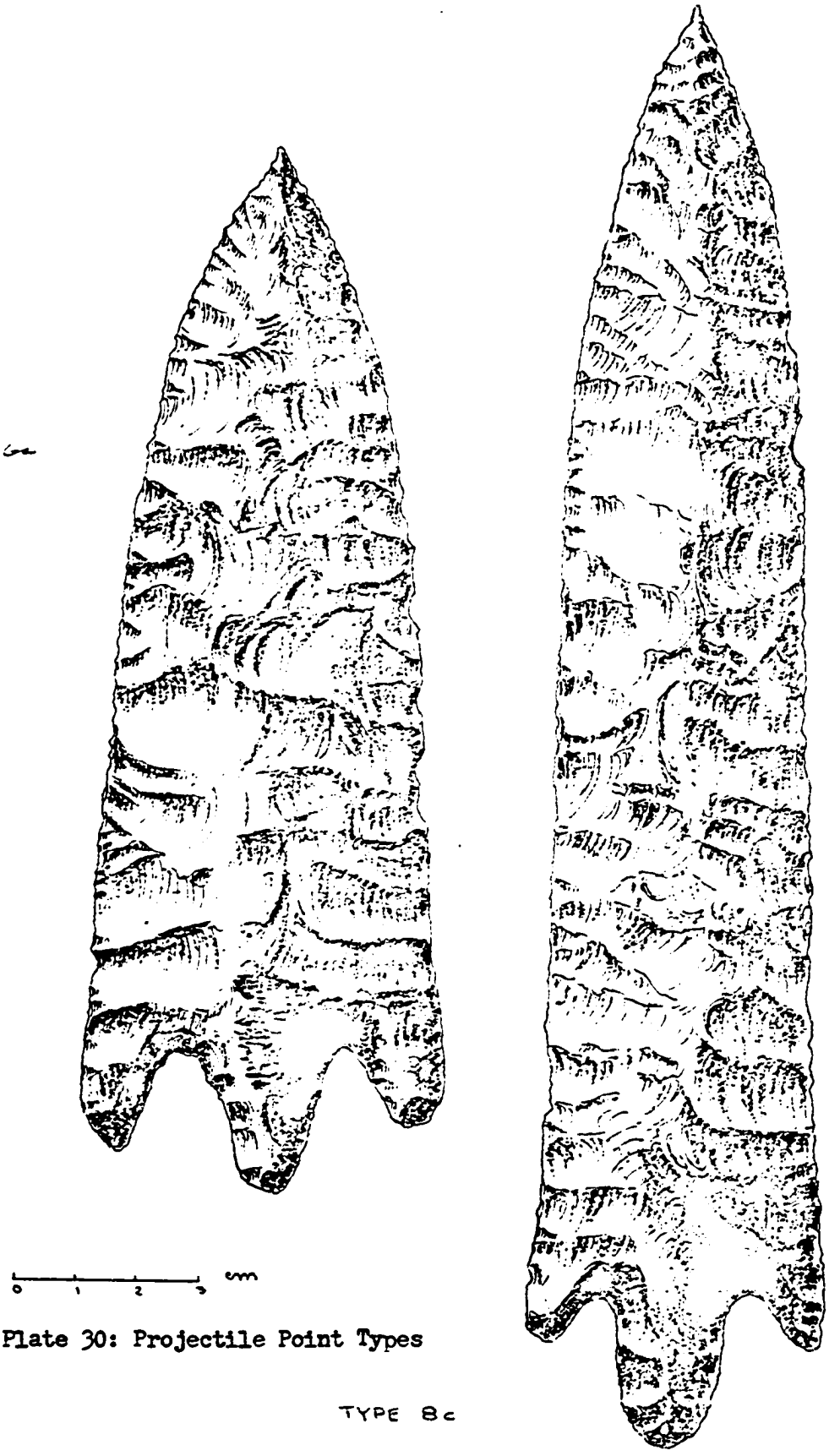

Plate 30: Projectile Point Types

TYPE 8c

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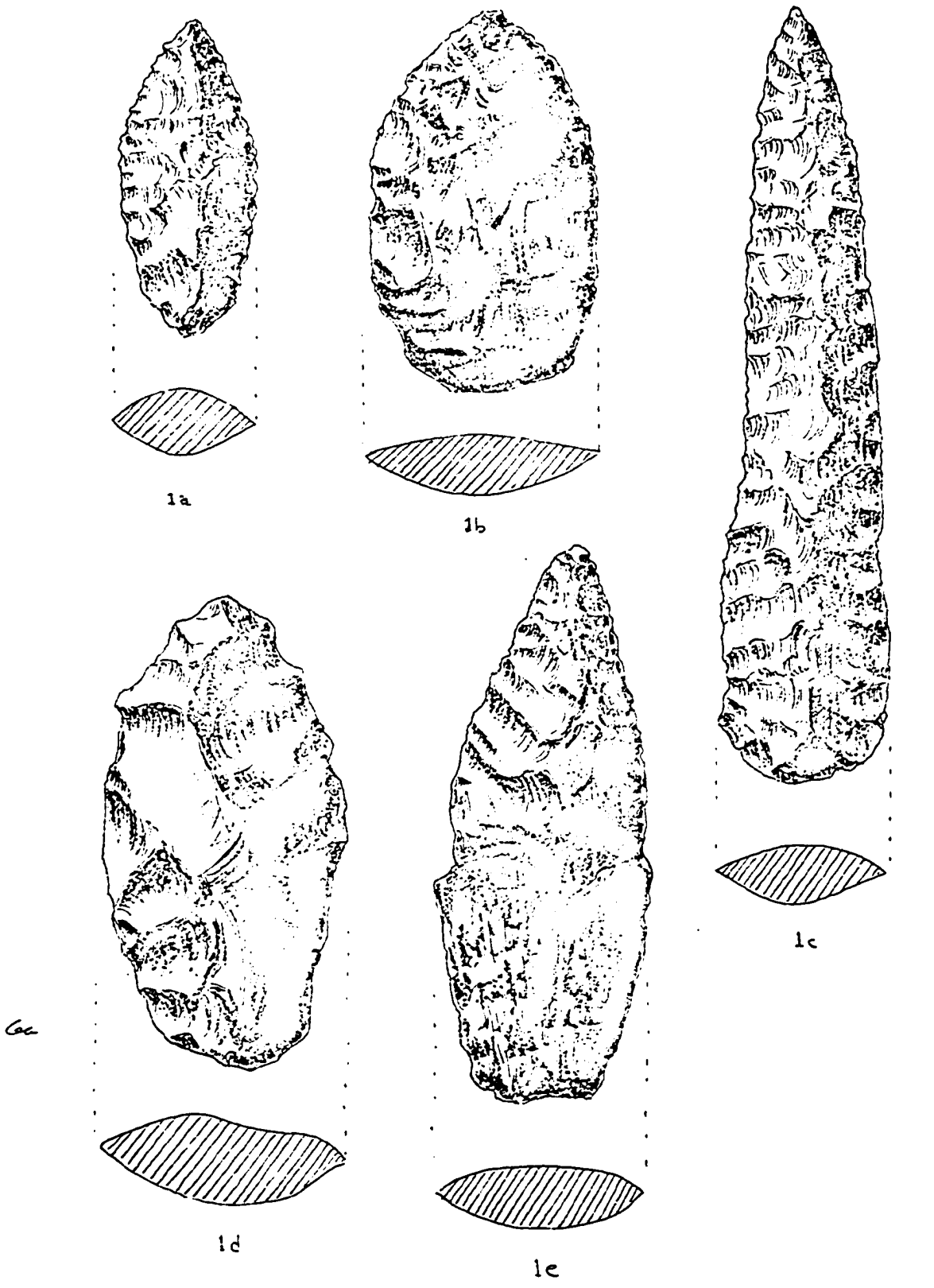

Plate 31: Knife Types

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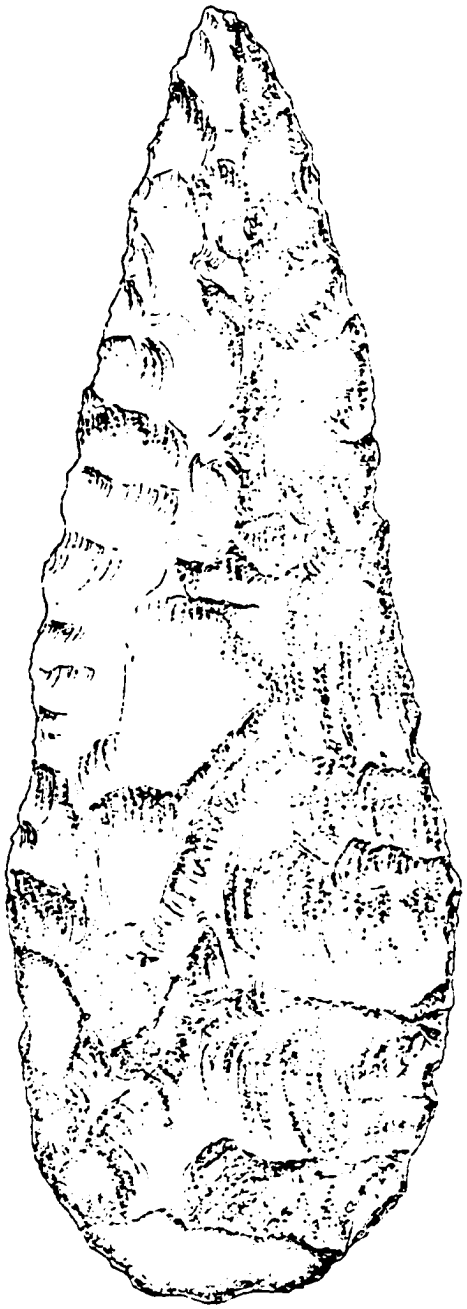
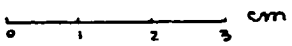


2a

2b

Plate 32: Knife Types



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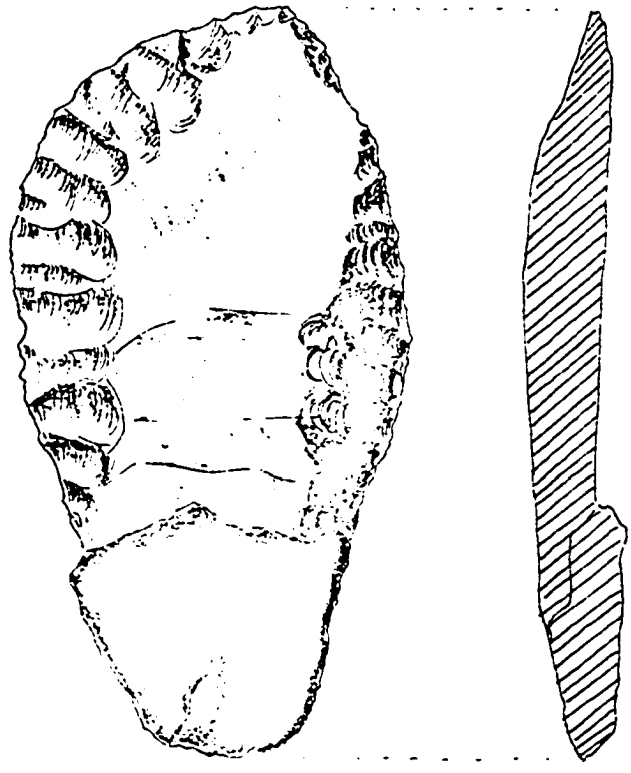
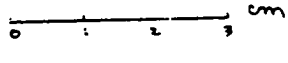


TYPE 2c

3a.

3a

Plate 33: Knife Types



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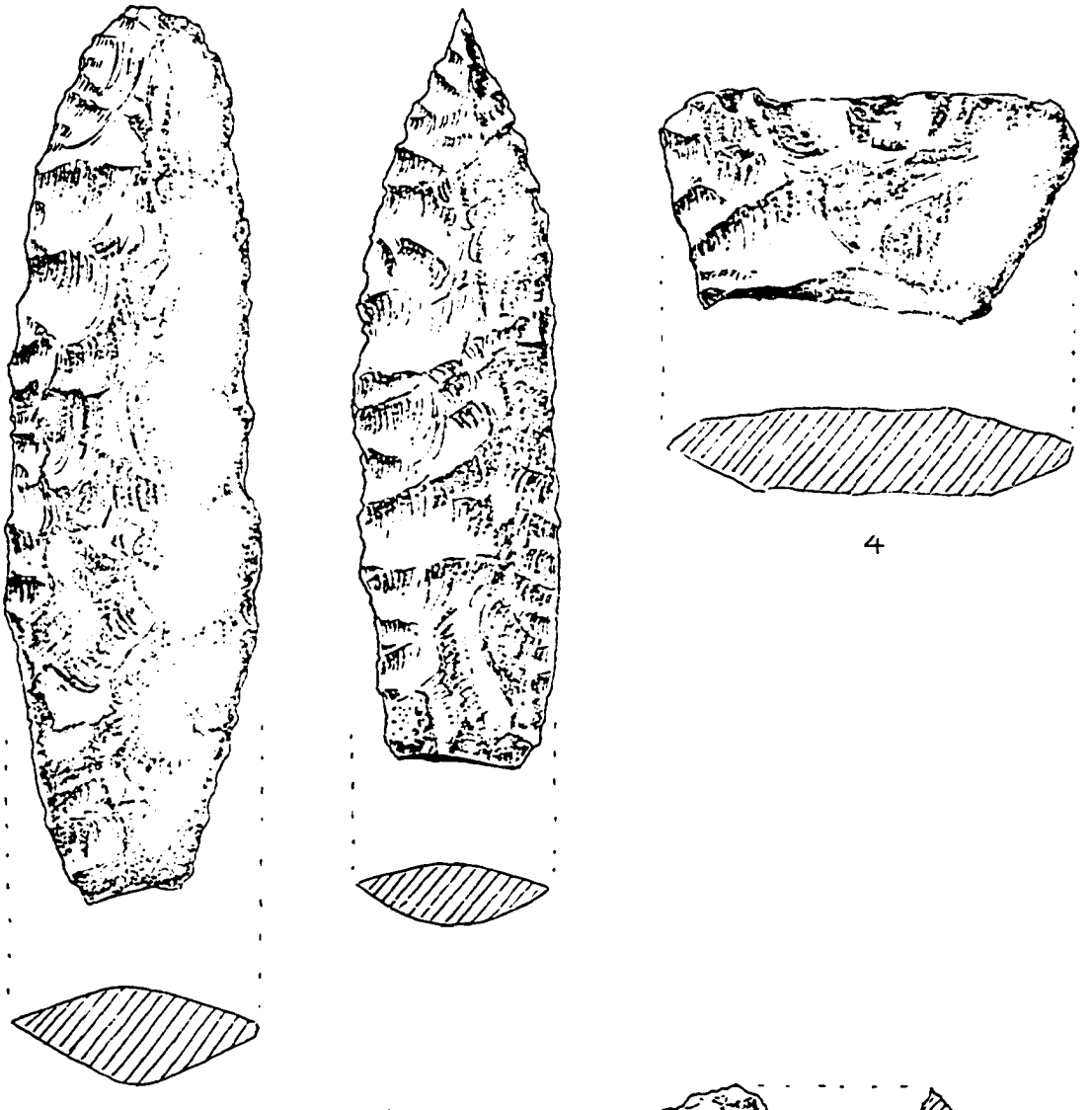

Plate 34: Knife Types

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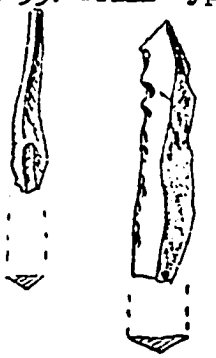
Plate 35: Drill Types



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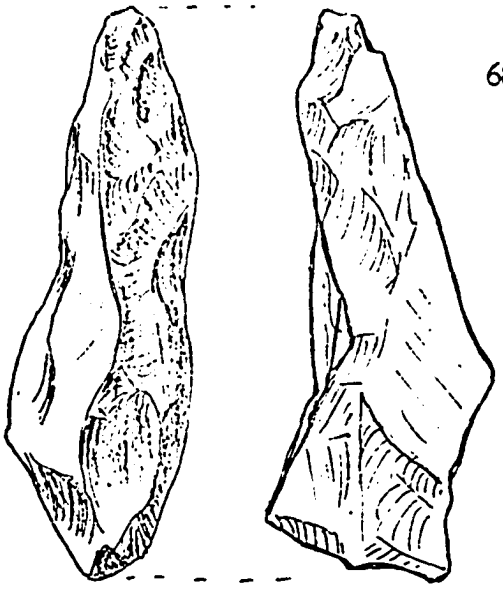

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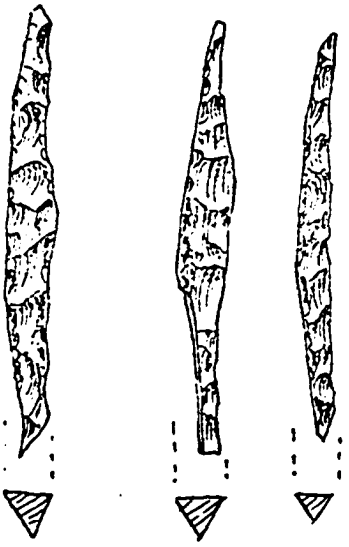

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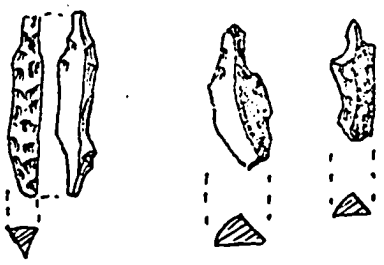

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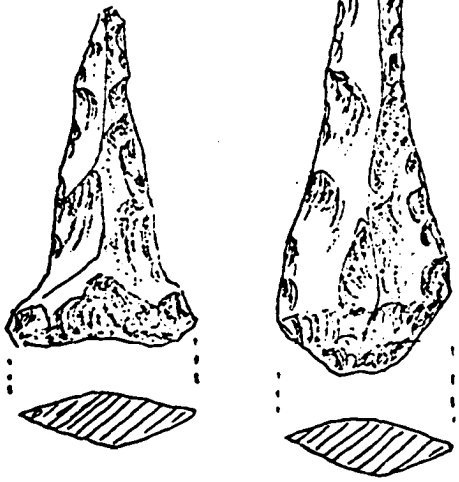

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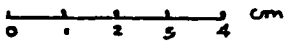

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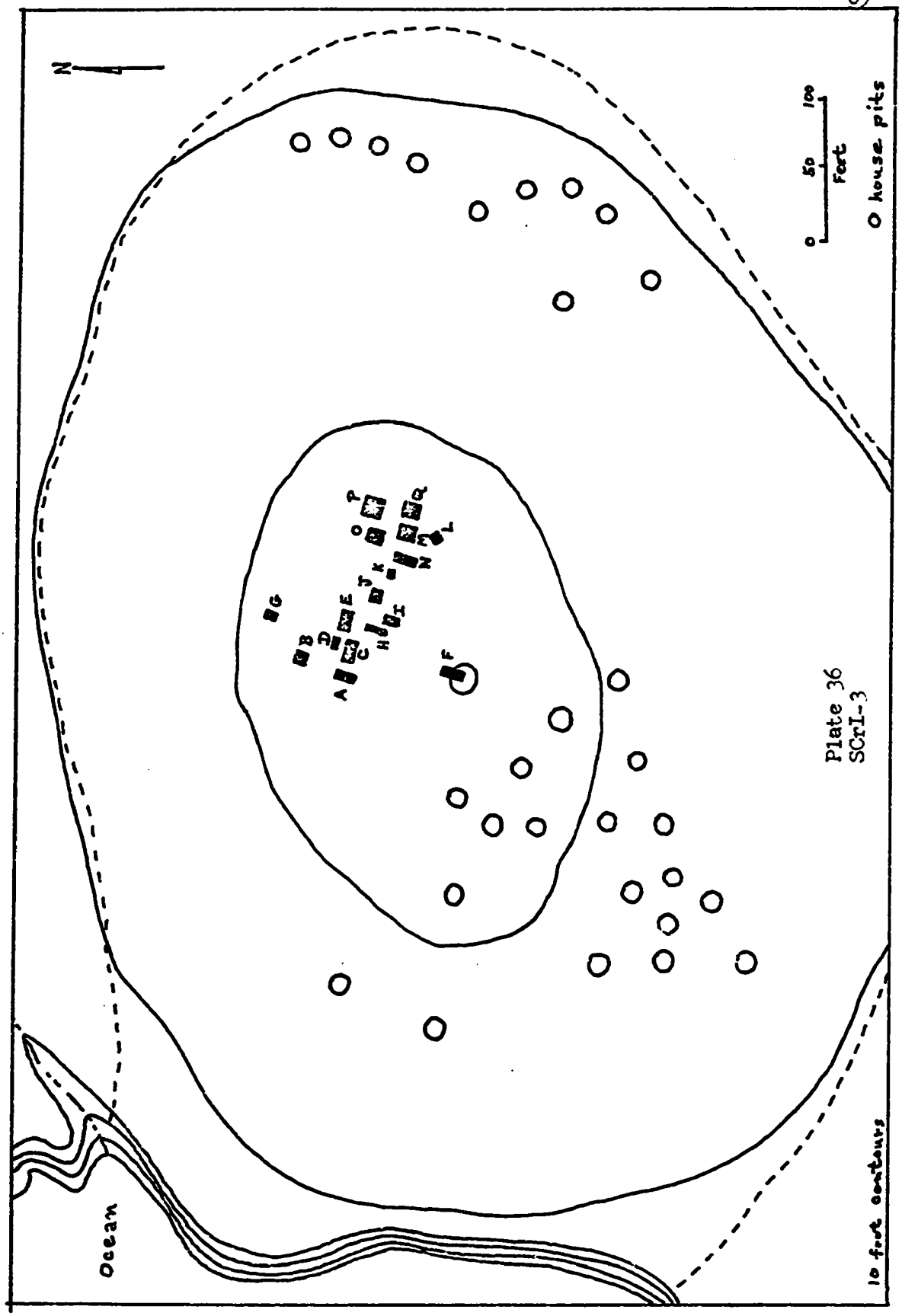

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SCrI-3

Site SCrI-3, Olson's Site 6 is an extensive shell midden covering a large low mound just behind Frazer's Point, on the northwestern tip of Santa Cruz Island. The site lies beneath the volcanic peaks of the Northern Range. Strong westerly winds only permit a growth of grasses and iceplant (Mesembryanthemum crystallinum) in the sandy soil. The site is located in the angle of an abandoned airstrip, which was responsible for partial destruction of the site's northern and southern margins during its construction in World War II. The plan of the site resembles a flattened circle and includes about 785,000 square feet. There are a number of circular depressions in two concentrations--one along the eastern margin of the site and another in the west-central area.

Olson dug seventeen pits, numbered A-Q, near the center of the site at its highest point. Pit sizes ranged from 10 feet square to 3 by 4 feet. One of these (Pit F) was located in one of the circular depressions. The cultural deposit extended to a depth of 63 inches, and consisted of alternate layers of sand and shell.

Stratigraphy

Olson's field notes contain two stratigraphic sections, one each from Pits A and F. Pit A was characterized by alternating strata of shell and sand in the upper 3 ft. of the pit. Two ash layers and a basal stratum of shell and sand were contained in a sand deposit between 3 and 6 ft. The cultural deposit does not extend below 6 ft. Five soil samples were collected at varying depths.

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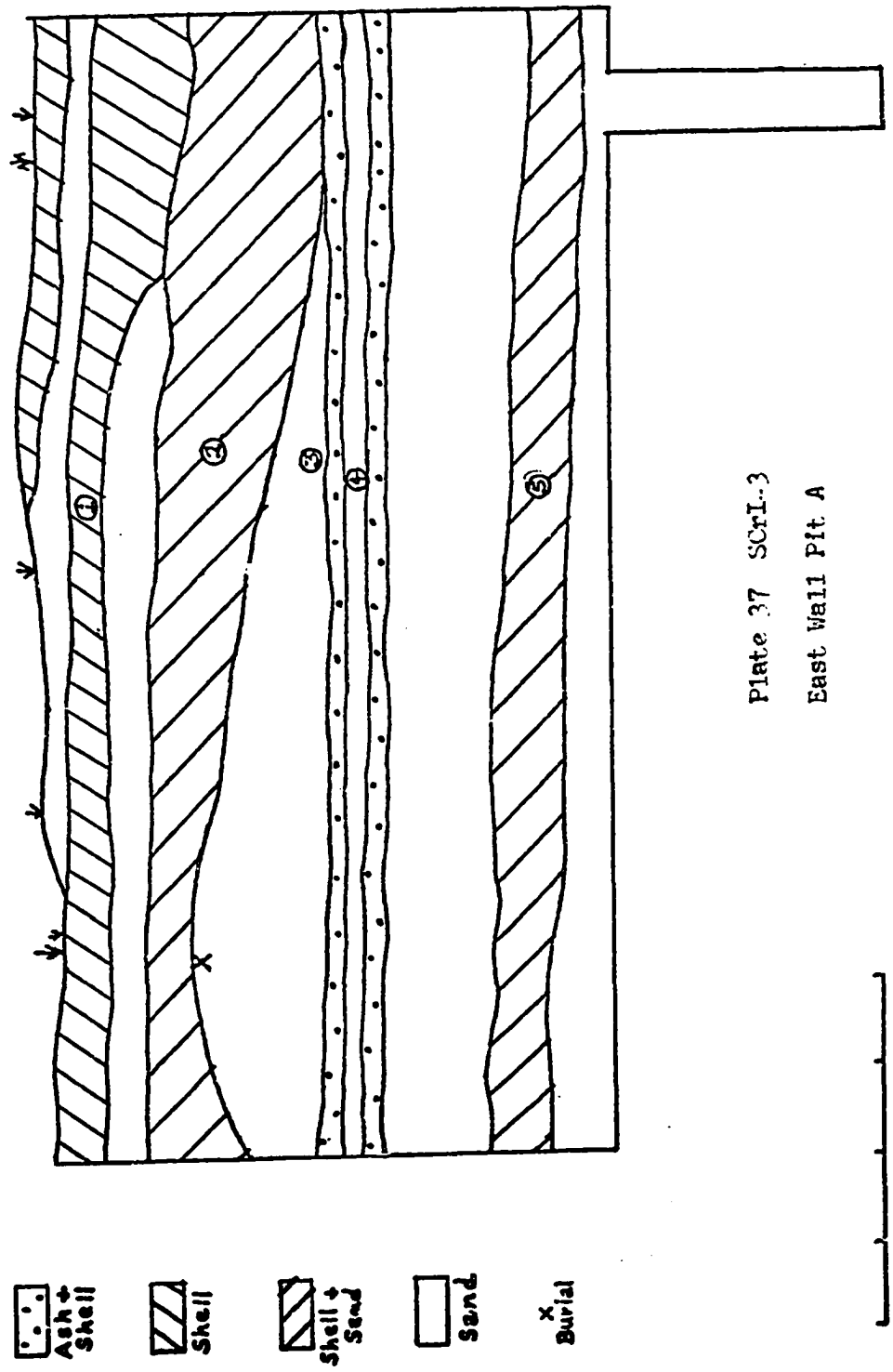

Plate 37 SCrI-3

East Wall Pit A

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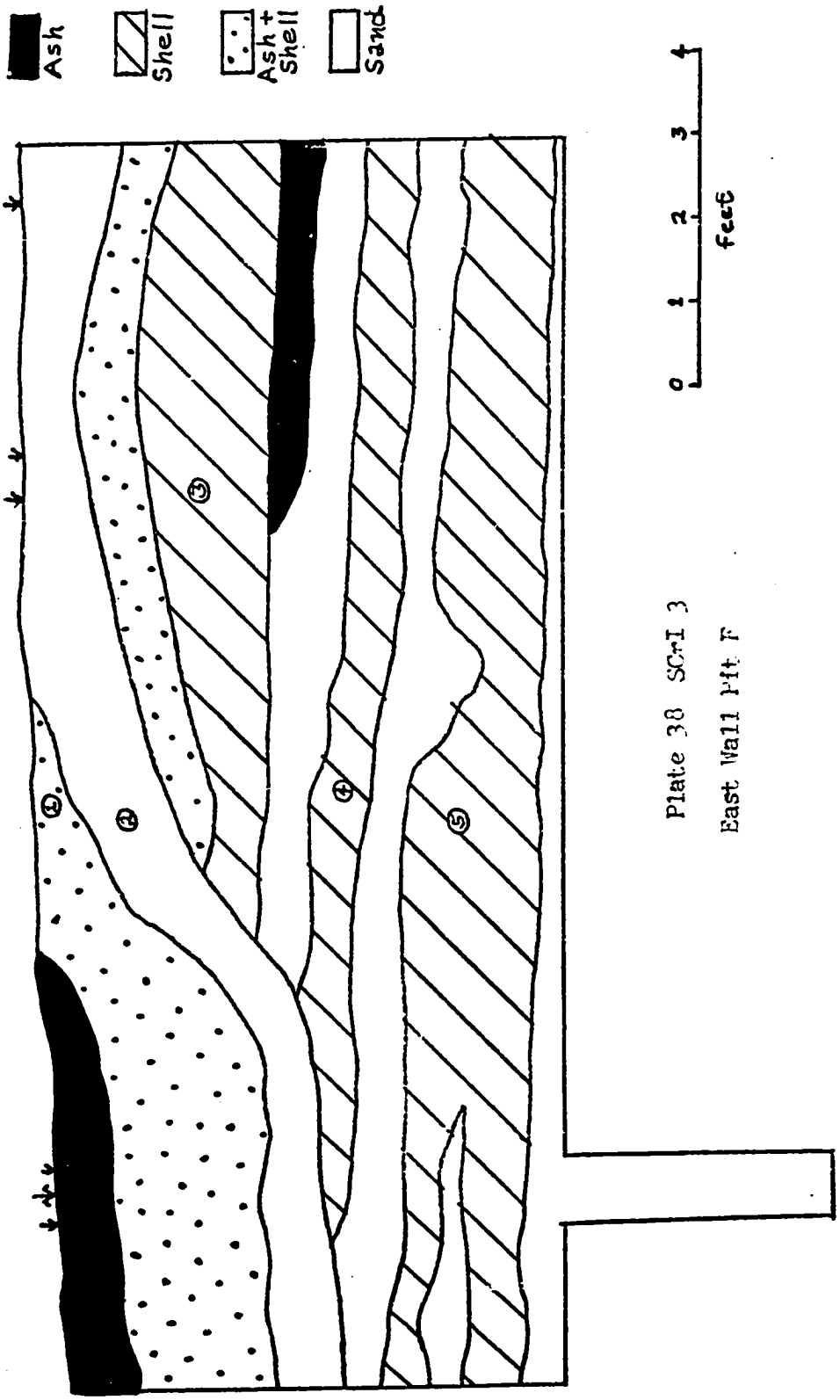

Plate 38 Scale 3

East Wall Pit F

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Pit F. contained a complex alternation of ash, shell, and sand strata to a depth of 6 ft. Two ash lenses probably represent prehistoric hearth depressions. The rate of prehistoric soil deposition at this site is unknown, but the thickness of the alternating layers would argue against mere seasonal occupation. The stratigraphy might indicate either the sporadic occupation of the site for relatively long periods or the alternate occupation and abandonment of specific portions of a continuously occupied site. The cultural deposits in Pit F do not extend below 6 ft.

Burials

Olson recovered 102 single and multiple burials from Site 3. They were found between 18 and 63 in. in depth in all excavation units except Pits F and J. Artifact associations were found with 84 of the burials, ocher with 30 of them, and at least 18 were in disturbed condition.

Table 3
Burial Tabulations, SCrI-3

Burial No.	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
D-1	18	LF	E	Su	A	M	-	-
K-1	18	Fl	W	LS	A		-	-
K-2	18	LF		sitting	A		-	-
K-3	18	LF	E	Su	I		-	-
E-4	20	LF	S	RS	A	F	X	-
A-1	23	LF	SE	Su	A	M	X	-
A-2	24	LF	E	Su	A	F	X	X
E-5	24	-	E	Su	A	F	X	X
E-8	24	LF	E	Su	A	M	-	-
G-1	24	LF	E	Su	A	F	X	-
I-5	24	LF	S	Su	A	F	X	-
M-10	24	Fl	E	Pr	A		-	-
M-10a	24	-	-	-	I		-	-
N-1	24	Fl	E	RS	A		-	-
O-1	24	Fl	W	RS	A		X	X

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Table 3 (continued)

O-2	24	Fl	W	RS	I		X	-
O-3	24	Fl	E	Pr	I		X	X
O-4	24	-	-	-	A		X	X
O-5	24	-	-	-	A		X	-
E-6	25	LF	E	LS	A	F	X	-
M-3	26	Fl	W	Pr	I		X	X
M-1	27	-	E	Su	A		X	-
E-7a	28	LF	E	Su	A	F	-	-
C-1	30	LF	E	Su	A	M	X	-
E-2	30	Fl	E	Su	Y	F	X	-
E-2a	30	-	-	-	I	M	X	X
E-3	30	Fl	S	LS	A	M	X	-
H-3	30	LF	S	Su	A	F	-	-
I-4	30	Fl	E	LS	A	F	X	-
L-1	30	Fl	E	LS	A	F	-	-
M-12	30	Fl	E	RS	A	M	X	-
N-2	30	Fl	E	RS	A		-	-
O-6a	30	-	E	Su	Y		X	-
P-1	30	Ex	SE	Su	C		X	-
P-4	30	-	N	Su	A	F	X	-
P-5	30	-	-	-	-		X	-
P-8	30	Fl	W	LS	A	F	X	-
P-9	30	-	N	Su	I		X	-
C-2	31	LF	E	Su	A	M	X	-
M-13	31	Fl	E	LS	A	M	X	-
C-16	32	LF	E	Su	A	M	X	-
C-17	32	Fl	E	LS	Y	M	-	-
M-2	32	-	-	-	I		X	X
M-6	32	Fl	W	LS	A		X	-
P-3	32	Fl	W	Su	A	M	X	X
C-14	33	Ex	SE	Su	A	M	X	X
E-1	33	Fl	E	RS	A	F	X	X
C-3	34	Ex	E	Su	A		X	X
C-4	34	Ex	E	Su	Y	M	X	X
C-5	34	Ex	E	Su	A	M	X	X
C-6	34	Ex	E	Su	A	M	X	-
D-2	34	Fl	N	RS	A	F	X	-
E-10	34	Fl	W	Pr	A	M	X	-
M-4	34	Fl	W	sitting	A	F	-	-
M-11	34	Fl	S	Pr	I		X	X
Q-1	34	Fl	N	Pr	I		X	-
Q-1a	34	LF	N	Pr	A		-	-
C-7	36	Ex	E	Su	Y	F	X	X
C-8	36	Ex	S	Su	I	F	X	-
C-11	36	Fl	SE	LS	C		X	-
C-12	36	Fl	-	Su	I		X	-
E-7	36	Fl	W	RS	A	F	X	X
H-2	36	-	E	RS	C		X	-
H-4	36	LF	E	RS	A	M	X	X
M-4a	36	Fl	S	sitting	A	M	X	X
M-5	36	LF	N	sitting	A	F	X	-
M-7	36	-	-	-	I		X	X

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Table 3 (continued)

O-6	36	-	S	Su	I		X	-
O-7	36	-	S	RS	I		X	X
O-8	36	-	-	-	I		X	-
O-9	36	-	-	-	I		X	-
P-2	36	Fl	N	Su	A		X	-
P-7	36	Fl	SE	sitting	A	M	-	-
C-8	37	Ex	S	Su	I	F	X	-
C-9	37	Ex	NE	Su	A	M	X	-
H-1	38	-	-	-	I		X	-
I-6	39	Fl	-	RS	A	F	X	-
M-9	39	Fl	W	sitting	A	F	X	-
P-11	39	Ex	E	Su	I		X	X
E-9	40	Fl	W	RS	A	F	X	-
I-7	40	LF	E	Su	A	M	X	X
M-8	40	Fl	W	LS	A	M	X	-
M-8a	40	-	-	-	I		X	X
O-10	40	-	NW	RS	A		-	-
Q-5	40	-	W	Pr	A	M	X	X
C-13	42	LF	E	LS	A	M	X	-
I-1	42	LF	W	Su	I		X	X
P-6	42	-	E	-	I		X	-
P-10	42	-	-	-	-		X	-
Q-2	44	Fl	S	Pr	C		X	-
Q-3a	48	LF	E	Su	A	M	X	-
Q-3b	48	LF	W	Su	A	F	X	-
Q-4	48	Fl	E	Pr	I		X	-
Q-6	51	Fl	N	LS	A		X	-
C-10	54	LF	SE	Su	A	M	X	-
I-2	54	LF	E	Su	A	F	X	X
I-3	54	LF	W	Su	A	M	X	-
P-12	54	Ex	S	Su	I		X	-
Q-7	54	-	W	-	A	M	X	-
Q-8	55	Fl	N	Pr	I		X	X
I-3a	60	LF	NE	Su	A		-	X
C-15	63	Ex	E	-	C	M	X	X

Chipped Stone Artifacts

Projectile Points

Eight projectile points were recovered from Site 3. They consisted of six chert specimens and one specimen each of agate and chalcedony.

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Table 4
Projectile Point Tabulation, Site 3

Pit or Burial	Depth in.	Type 1c	5a	5c	6a	8a	Indeterminate
surface	-	-	-	-	1	-	-
A	0-12	1	-	-	-	-	-
A	24-36	-	-	-	-	-	1
F	24-36	-	1	-	-	-	-
Q-3a	48	-	-	-	-	-	1
Q-7	54	-	-	-	1	-	-
no loc.	-	-	-	1	-	1	-
Total		1	1	1	2	1	2

Core Drill

A single core drill of pink chert was found at a depth of 30 in. in association with Burial I-4. The drill was triangular in section, weighed 36.97 gm., and measured 74 mm. in length.

Flake Scrapers

Fourteen blade scrapers were recovered from Site 3. All but one basalt specimen (Burial E-1) were of chert.

Table 5
Flake Scraper Distribution, Site 3

Pit or Burial	Depth in.	No. of specimens	Material
surface	-	3	chert
A	0-12	1	chert
A	12-24	1	chert
A-2	24	3	chert
I-5	24	1	chert
F	24-36	1	chert
C-2	31	1	chert
E-1	33	1	chert
Q-3a	48	1	chert
C-10	54	1	chert

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Ground Stone Artifacts

Tubular Steatite Beads

Olson recovered 190 tubular steatite beads from Site 3. Most beads were dark blue, with a few mottled green specimens. All examples were biconically drilled, but some have the drilled hole reamed until they appear to be bored straight. These beads grade imperceptably from 3.0 to 50 mm. in length, with diameters ranging from 8.0 to 21.0 mm. All examples were of Type 1a.

Table 6
Steatite Bead Distribution, Site 3

Burial No.	Depth in.	No. of beads	Ocher
E-4	20	9	-
E-6	25	1	-
C-1	30	4	-
I-4	32	2	X
C-14	33	8	X
E-1	33	17	X
C-3	34	20	-
C-5	34	23	X
C-6	34	17	X
C-7	36	6	-
H-2	36	8	X
C-13	42	2	-
I-1	42	9	X
Q-4	48	8	-
C-14	63	56	X

Steatite Ornaments

Eight trapezoidal pieces of dark blue steatite have rectangular cross-sections and single perforations drilled biconically at the small end (Type 2a). The specimens were not highly polished. Lengths range from 20 to 50 mm. All specimens came from Burial C-7 at 36 in. One additional example was teardrop shaped (Type 2b) with a single perforation at the small end. It was broken at the perforation during

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manufacture and had been repaired with asphalted binding. The specimen was associated with Burial D-2 at 34 in.

Steatite Pipes

Site 3 produced three mottled green steatite pipes of Type 1, all tubular and very slightly tapered at the ends. All three pipes had originally been drilled biconically and later reamed and abraded smooth to create an internal hole of nearly parallel sides.

Table 7
Steatite Pipe Data, Site 3

Burial No.	Depth in.	Length mm.	Exterior diameter mm.	Interior diameter mm.
M-12[1]	30	114	30	19
P-4[2]	30	34	29	17
P-10[2]	42	205	29	20

Steatite Bowls

All 3 steatite bowls show evidence of deep gouge marks on the interior surface. Two examples also have abrasive marks on the external surface. The rounded light-green bowl from Burial Q-4 had a single V-shaped groove on the rim 1 mm. deep and 3 mm. wide with red ocher rubbed in. The flat-bottomed dark blue bowl from Burial C-4 has

---

[1]This specimen has a circular Haliotis disk with a single central perforation set in asphaltum at one end. The pipe perforation has been abraded smooth.

[2]These specimens have traces of asphaltum at one end and are stained with red ocher. The pipe perforations have been abraded after drilling.

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vertical sides and a plain sharply rounded rim. The third specimen of dark blue steatite has a rounded bottom, a rounded rim, and contained a series of radiating incisions about 3 mm. apart.

Table 8
Steatite Bowl Data, Site 3

Burial No.	Depth in.	Height cm.	Exterior diameter cm.	Interior diameter cm.	Depth of bowl cm.
M-3	26	5.1	10.4	8.3	3.4
C-4	32	6.5	8.5	7.4	5.0
Q-4	48	10.0	19.5	15.9	7.9

Mortars

Fourteen mortars, consisting of 8 types, were recovered from Site 3. Most specimens were of sandstone, with a few lava and granite examples.

Table 9
Mortar Distribution, Site 3

Pit or Burial	Depth in.	Type 1a	2a	2b2	3b	6a2	6b1	8a	8c	Indeterminate
surface	-	-	1	-	-	-	1	-	-	1
F	0-12	-	-	-	-	-	-	1	-	-
M-10	24	1	-	-	-	-	-	-	-	-
P-4	30	-	-	-	-	-	-	-	-	1
P-8	30	1	-	-	-	-	-	-	-	-
C-6	34	-	-	-	-	-	-	1	-	-
Q-1	34	1	-	-	-	-	-	-	-	-
C-7	36	1	-	-	-	-	-	-	1	-
E-9	40	-	-	-	1	1	-	-	-	-
C-10	54	-	-	1	-	-	-	-	-	-
Total		4	1	1	1	1	1	2	1	2

Pestles

Nineteen pestles were recovered from Site 3. Sixteen specimens were made of sandstone, and the remainder were of volcanic stone. Lengths ranged from 10.7 to 29.0 cm., and widths ranged from 4.3 to 8.8 cm. at the point of maximum diameter.

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Table 10
Pestle Distribution, Site 3

Pit or Burial	Depth in.	Type 1a	Type 2	Type 3	Indeterminate
surface	-	1	2	1	2
F	24-36	-	-	-	1
M-13	30	-	1	-	-
M-6	32	-	1	-	-
C-7	36	-	4	-	-
E-9	40	-	-	-	1
Q-5	40	-	1	-	-
I-1	42	-	1	-	-
I-4	42	-	1	-	-
C-10	54	-	1	-	-
C-15	63	-	1	-	-
Total		1	13	1	4

Charmstones

A single polished plummet-shaped charmstone was recovered from Burial C-15 at 63 in. It has a diameter of 41 mm. at its widest point and a length of 81 mm. The specimen is grooved around its circumference 20 mm. from the more tapered end.

Doughnut Stones

Nineteen doughnut stones were recovered from Site 3. They ranged from 4.5 to 48.25 gm. in weight, 6.1 to 12.4 cm. in exterior diameter, .9 to 2.7 cm. in interior diameter, and 3.4 to 8.0 cm. in thickness.

Table 11
Doughnut Stone Distribution, Site 3

Pit or Burial	Depth in.	No. of specimens	Ocher stains
surface	-	2	-
A-1	23	1	-
I-4	30	2	X
P-1	30	1	-
P-4	30	1	-
C-7	36	2	-

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Table 11 (continued)

O-6	36	1	-
F	36-48	1	-
P-10	42	1	-
Q-3b	48	2	-
Q-6	51	1	X
C-10	54	1	X
Q-7	54	3	-

Sinker Stones

All four of these beach pebbles are elongate and retain marks of binding with asphaltum around the medial circumference. All were recovered from Burial C-3 at 34 in.

Fine Sandstone Implements

Burial C-7 at 36 in. contained 148 implements of fine brittle sandstone. Single specimens were found in Burials I-4 and P-9 (30 in). These specimens are 2 to 3 mm. thick and average 12 cm. in length. The specimens may have been used as whetstones for ground stone tools.

Hammerstones and Abrading Stones

Hammerstones of quartzite have batter marks on their surfaces, and abrading stones of lava or sandstone are slab-shaped.

Table 12
Hammerstone and Abrading Stone Data, Site 3

Pit or Burial	Depth in.	No. of hammerstones	No. of abrading stones
surface	-	1	6
F	0-12	1	-
F	24-36	1	-
M-12	30	2	-
P-4	30	1	-
C-3	34	1	-
P-6	42	-	1
Total		7	7

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Worked Steatite Fragments

Both specimens were recovered from Burial C-10 at 54 in. One example is roughly spherical and has been grooved from opposite sides until almost broken in half. The other specimen has been cut on opposite sides until nearly separated and then snapped off from a larger chunk. There is ocher on both specimens.

Stream-Worn Pebbles

Stream-worn pebbles, 132 of which were coated with asphaltum, were recovered from the surface to the lowest excavated depths. The uncoated pebbles may have been used as "pot boilers" for indirect cooking. Most specimens were of colored siliceous stone, such as agate or chalcedony. There was a total of 152 specimens.

Shell Artifacts

Shell Beads and Tubes

A total of 13,496 shell beads were recovered from Site 3, comprising 19 types. Their distribution has been summarized in Table 13.

Shell Ornaments

Sixty-five specimens of *Haliotis* shell ornaments were recovered from Site 3. Their distribution has been summarized in Table 14, where 14 types are represented.

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Table 13
Shell Bead Distribution, Site 3

Burial No.	Depth in.	Type 1b	1e	1f	1j	11	4a	6a	6b	6c	10a	10b	18a	20	23a	25a	25b	26a	35	36
E-4	20	-	-	-	3	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-
A-1	23	-	-	-	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A-2	24	-	-	8	2297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E-5	24	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
O-1	24	-	-	4	-	-	-	-	-	-	-	29	-	-	-	-	-	-	-	-
O-2	24	-	-	-	-	-	-	-	-	8	-	3	-	-	-	-	-	-	-	-
E-6	25	-	-	-	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M-3	26	-	-	7	-	-	-	1	-	-	-	-	-	-	6	-	-	-	-	-
M-1	27	-	-	1	2	-	-	-	-	-	-	3	-	-	1	-	-	-	-	-
C-1	30	-	-	-	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E-2	30	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-
E-3	30	-	-	-	-	-	-	296	-	-	-	-	-	-	-	-	-	-	-	-
H-3	30	-	-	-	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I-4	30	-	-	2	955	-	395	17	3	-	-	5	-	-	-	-	-	-	-	-
M-12	30	-	-	-	57	-	-	21	-	-	-	-	-	-	-	-	-	-	-	-
P-1	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-
P-4	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	2	-	-
P-5	30	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	3	-	-	-
P-8	30	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	3	-	-	-
P-9	30	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-
C-2	31	-	-	-	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M-13	31	-	-	426	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-16	32	-	-	-	-	-	-	-	-	-	-	84	-	-	-	-	-	-	-	-
P-3	32	-	-	-	1	-	2	23	-	1	107	-	-	-	-	-	-	-	-	-
C-14	33	-	-	-	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E-1	33	-	-	-	48	1	-	672	-	-	-	-	-	-	-	-	-	-	-	-
C-3	34	-	-	-	167	-	51	659	-	-	-	20	-	3	-	-	-	-	-	-
C-5	34	-	-	-	70	-	-	79	-	-	1	16	-	-	-	-	-	-	-	-
C-6	34	-	-	-	17	-	-	-	-	-	-	15	-	-	-	9	-	-	-	-

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Table 13 (continued)

Burial No.	Depth in.	1b	1e	1f	1j	11	4a	6a	6b	6c	10a	10b	18a	20	23a	25a	25b	26a	35	36
D-2	34	-	-	-	755	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M-4	34	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M-11	34	-	-	4	4	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-
Q-1	34	-	-	-	5	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-
C-7	36	-	-	-	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
C-12	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
H-2	36	-	-	-	494	-	136	68	-	-	-	10	-	-	-	-	-	-	-	-
H-4	36	-	-	-	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M-5	36	-	-	-	25	-	-	-	-	-	-	1	-	-	-	-	2	-	4	-
O-6	36	-	-	3	27	-	-	-	-	-	-	24	-	-	-	-	-	-	-	-
O-7	36	-	-	17	517	-	-	-	-	-	5	16	-	-	-	-	1	-	-	-
O-9	36	-	-	-	447	-	-	-	-	-	4	4	-	-	-	2	-	-	-	-
P-2	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
P-7	36	-	-	26	32	-	-	-	-	-	16	1	-	-	-	-	5	-	-	-
C-8	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-
C-9	37	-	-	-	298	5	2	-	-	-	-	9	-	-	-	-	-	-	-	-
H-1	38	-	-	-	1245	-	-	-	-	-	-	41	-	-	8	-	-	-	-	1
I-6	39	-	-	-	103	-	2	5	-	-	-	-	-	-	-	-	-	-	-	-
M-9	39	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-11	39	-	-	5	321	-	-	-	-	-	1	2	-	-	2	10	-	-	-	-
E-9	40	-	-	-	27	-	21	-	-	-	-	-	-	-	-	-	-	-	-	-
M-8	40	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
O-10	40	1	-	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
Q-5	40	-	-	-	20	-	1	-	-	-	10	6	-	-	1	-	-	-	-	-
C-13	42	-	-	-	52	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
I-1	42	-	-	-	7	-	-	-	-	-	-	19	3	-	-	-	-	-	-	-
P-6	42	-	-	52	1	-	-	-	-	-	-	24	-	-	-	-	-	-	-	1
P-10	42	-	-	-	132	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-
Q-2	44	-	-	-	-	-	-	10	-	-	-	25	-	-	-	-	-	-	-	-

Table 13 (continued)

Burial No.	Depth in.	Type																	
		1b	1e	1f	1j	11	4a	6a	6b	6c	10a	10b	18a	20	23a	25a	25b	26a	35	36
Q-3b	48	-	-	-	-	-	-	-	-	-	-	1	-	-	78	-	-	-	-	-
Q-4	48	-	-	-	5	-	-	-	-	-	-	35	-	-	-	-	-	-	-	-
Q-6	51	-	-	-	-	-	-	-	-	-	-	34	-	-	-	-	-	-	-	-
I-2	54	-	-	-	12	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
P-12	54	-	-	44	-	-	-	13	-	-	-	30	-	-	-	2	-	-	-	1
Q-7	54	-	-	7	52	-	-	-	-	-	-	9	-	-	3	-	-	-	-	-
Q-8	55	-	-	310	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-
C-15	63	-	-	-	331	-	8	47	-	-	-	114	-	-	-	-	-	-	-	-
Total		1	1	917	8829	6	618	1915	3	21	149	584	44	3	101	51	21	2	4	3

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Table 14

Haliotis Ornament Distribution, Site 3

Burial No.	Depth in.	Type C	C2	C5	C5g	E	E1f	E3	E3f	F3	F3f	O	O3	O3g	fragment
E-4	20	-	1	-	-	-	-	-	-	-	-	-	-	-	-
A-2	24	-	-	1	-	1	-	-	-	-	-	-	-	-	-
O-2	24	-	-	-	-	-	1	-	5	-	-	-	-	-	-
O-3	24	-	-	-	1	-	-	-	-	-	-	-	-	-	-
M-3	26	-	-	-	-	-	-	-	-	-	-	-	-	1	-
E-2	30	-	-	1	-	-	-	-	-	-	-	-	-	-	-
I-4	30	1	-	2	-	1	-	-	2	-	-	-	-	-	-
M-12	30	-	-	4[a]	-	-	-	-	-	-	-	-	-	-	-
P-4	30	-	-	-	-	-	-	-	1	-	-	-	1	-	-
P-9	30	-	-	-	-	-	-	-	-	-	-	1	-	-	-
C-3	34	-	1	-	-	-	-	-	-	-	-	-	-	-	1
D-2	34	-	-	-	-	-	-	-	-	8	1	-	-	-	1
C-7	36	-	-	-	-	-	-	-	-	-	-	-	-	-	1
H-2	36	-	1	1	-	-	-	2	-	-	-	-	-	-	-
O-7	36	-	-	-	1	-	-	-	-	-	-	-	-	-	-
O-9	36	-	-	1	-	-	-	-	-	-	-	-	-	-	-
P-7	36	-	-	1	-	-	-	-	-	-	-	-	-	-	-
P-11	39	1	-	-	-	-	-	-	-	-	-	-	-	-	-
E-9	40	-	-	1	-	-	-	-	-	-	-	-	-	-	-
O-10	40	-	-	1[a]	-	-	-	-	-	-	-	-	-	-	-
Q-5	40	-	-	2	3	-	-	-	-	-	-	-	-	-	-
Q-3b	48	-	-	-	-	-	-	-	-	-	-	-	-	1	-
C-10	54	-	1	-	-	-	-	-	-	-	-	-	-	-	-
I-2	54	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Q-7	54	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Q-8	55	-	-	-	-	-	-	1	1	-	-	-	-	-	-
C-15	62	-	-	1	-	-	-	-	1	1	-	-	-	-	2
Total		2	4	16	5	2	1	3	12	9	1	1	1	2	6

[a] Haliotis rufescens shell present. All other specimens were of Haliotis cracherodii.

Worked Haliotis Shell

Two specimens of H. cracherodii, one broken along the line of siphonal openings and the other central part of the shell with asphalt applied to both surfaces, were recovered from Burial P-3 at 32 in. and Burial Q-7 at 54 in., respectively.

Whole Haliotis Shell

Some of these 39 specimens had siphonal openings plugged with asphaltum and were used as containers.

Table 15
Whole Haliotis Shells, Site 3

Burial No.	Depth in.	Haliotis cracherodii	Haliotis rufescens	Haliotis spp.
I-4	30	2	-	-
M-13	30	1	-	-
C-2	31	2	-	-
M-2	32	-	-	1
P-3	32	-	2	-
C-14	33	1	1	-
C-6	34	-	1	-
Q-1	34	1	-	-
C-7	36	3	2	-
E-7	36	2	-	-
H-4	36	3	-	-
M-7	36	-	-	1
O-6	36	1	-	-
M-8	40	-	1	-
M-9	40	-	1	-
P-11	40	3	-	-
Q-5	40	1	-	-
Q-3	48	-	3	-
Q-4	48	2	-	-
C-10	54	-	-	1
I-2	54	-	1	-
C-15	63	1	-	1
Total		23	12	4

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Caches of Unworked Olivella Shells

Five caches of unworked Olivella shells were recovered from Site 3. All specimens were part of burial associations.

Table 16
Olivella Caches, Site 3

Burial No.	Depth in.	No. of shells
A-2	24	227
I-4	30	319
C-9	37	54
P-9	42	19
Q-3	48	12
Total		631

Pecten Shell

This specimen was recovered from Burial C-15 at 63 in. and was covered with powdered red ocher.

Bone Artifacts

Bone Beads and Tubes

Fifteen bone beads and tubes, comprising five types, were recovered from Site 3. Bird bone and mammal bone tubes were present, as were three types of sea mammal vertebrae spools.

Table 17
Bone Beads and Tubes, Site 3

Burial No.	Depth in.	Type EE1a	EE1b	CC2	CC3	CC4
O-1	24	-	1	-	-	-
I-4	30	-	1	-	2	-
M-12	30	1	-	-	-	-
P-4	30	-	1	-	-	-
C-5	34	-	-	-	-	2
C-7	36	-	1	2	-	-
H-4	36	1	-	-	-	-
O-7	36	-	2	-	-	-
I-2	54	-	-	1	-	-
Total		2	6	3	2	2

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Bone Daggers

Olson recovered 22 bone daggers from Site 3. Four types were present, consisting of various forms of split cannon bones and tibias.

Table 18
Bone Daggers, Site 3

Burial No.	Depth in.	Type B3	B6	P1	P2a	Indeterminate
P-4	30	-	1	-	-	-
M-13	31	1	4	-	1	3
M-2	32	1	-	2	-	-
M-5	36	2	-	-	-	-
P-7	36	-	-	-	-	1
Q-2	44	-	-	2	-	-
Q-3a	48	-	-	1	-	-
Q-3b	48	-	-	1	-	-
C-10	54	1	-	-	-	-
Q-8	54	-	-	-	-	1
Total		5	5	6	1	5

Bone Awls

Forty-two bone awls and awl fragments were recovered. The six types represented are mostly of sea mammal bone.

Table 19
Bone Awls, Site 3

Pit or Burial	Depth in.	Type AlaII	AlaIII	AlbI	AlbII	AlcII	Ald	Indeterminate
surface	-	-	3	1	-	-	-	2
A-1	23	-	-	-	-	-	-	1
E-5	24	-	-	-	-	-	-	1
F	24-36	-	-	-	-	-	-	1
E-6	25	-	1	-	-	-	-	-
M-3	26	-	-	-	-	-	1	-
E-2	30	-	-	-	1	-	-	-
I-4	30	-	-	-	-	-	-	1
E-4	30	-	-	-	1	-	-	-
M-13	30	-	-	-	-	-	-	1
P-4	30	-	1	-	-	2	1	-
P-3	32	-	-	-	-	-	1	-
D-2	34	-	1	-	-	-	-	-
M-11	34	-	1	-	-	-	-	1
H-4	36	-	-	-	-	-	-	1
O-7	36	-	-	-	-	-	-	2

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Table 19 (continued)

F	36-40	-	1	-	-	-	-	-
P-11	39	-	-	-	-	-	-	1
M-9	40	-	3	-	-	-	-	-
Q-5	40	-	-	-	-	-	-	1
P-6	42	-	-	-	-	-	-	1
Q-4	48	-	-	-	-	-	-	1
I-2	54	1	-	-	-	-	-	-
Q-8	54	-	-	-	-	-	-	2
C-15	63	-	-	-	-	-	-	4
A	72-84	-	-	-	-	-	-	1
Total		1	11	1	2	2	3	22

Bipointed Gorge Fishhooks

Seventeen bipointed bone gorges were recovered from Site 3, some with traces of asphaltum binding near their midpoints. They have circular or elliptical cross-sections and are all of Type T1g.

Table 20
Bone Gorges, Site 3

Pit or Burial	Depth in.	No. of specimens	Asphaltum binding
G-1	24	2	X
E-6	25	1	X
M-1	27	2	X
M-13	30	4	X
C-2	31	1	X
E-2	33	1	X
P-11	39	1	-
M-9	40	2	X
F	48-60	2	X
C-15	63	1	-

Cetacean Vertebra Mortar

A single Type BB1 cetacean vertebra mortar was recovered from the surface. It is 14 cm. high, 22 cm. wide at the base, and has a bowl 7.5 cm. deep and 15 cm. in diameter.

Miscellaneous Bone Artifacts

Thirty-two miscellaneous bone artifacts include spatulate and wedge-shaped tools of whalebone and pins of bird and mammal bone.

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Table 21
Miscellaneous Bone Artifacts, Site 3

Pit or Burial	Depth in.	Type A4aI	A4bI	A4bII	D6	E2	F	Indeterminate
surface	-	-	-	-	-	2	-	1
A	12-24	-	-	-	-	-	-	1
O-2	24	-	2	-	-	-	-	-
M-1	27	-	-	-	-	-	1	-
M-12	30	-	3	-	-	1	-	4
P-2	30	1	-	-	-	-	-	-
P-5	30	-	-	-	-	-	-	1
C-6	34	-	-	-	-	-	-	2
C-7	36	-	-	-	1	-	-	-
O-7	36	-	-	1	-	-	-	1
P-8	36	-	-	1	-	-	-	-
F	36-48	-	-	-	-	-	-	1
Q-5	40	-	-	1	-	-	-	2
Q-6	40	-	-	-	-	-	-	1
C-10	54	-	-	-	1	-	-	-
I-2	54	-	-	-	-	-	-	1
Q-7	54	-	-	-	2	-	-	-
Total		1	5	3	4	3	1	15

Antler Tools

The four antler tools from Site 3 were presumably traded from the mainland, as deer are unknown on Santa Cruz Island. The specimens included two wedges, a haft, and a flaker.

Table 22
Antler Tools, Site 3

Burial No.	Depth in.	Type HH	JJ	Flaker
C-14	33	-	1	-
C-7	36	1	-	-
P-11	39	-	-	1
Q-7	54	1	-	-
Total		2	1	1

Woven Materials

No actual basketry was preserved in the site, but a sizeable number of asphalt impressions were recovered as parts of water-proofed baskets.

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Twined Basketry Impressions

These 39 impressions of plain twining have the slant of the weft twisted down to the right. The multiple-rod warps appear to consist of Juncus spp. stems, providing a technological continuity with the historic Chumash (Dectz and Dawson 1965).

Table 23
Twined Impressions, Site 3

Pit or Burial	Depth in.	1-rod warp	2-rod warp	3-rod warp	multiple rod warp	Indeterminate
F	0-12	-	-	-	-	1
A-2	24	-	-	-	1	-
G-1	24	-	-	1	-	1
I-5	24	-	-	-	1	-
E-6	25	-	-	-	1	-
M-12	30	-	-	1	1	-
P-3	32	-	-	-	1	-
E-1	33	-	-	-	1	-
C-3	34	-	-	-	-	2
C-6	34	-	-	-	-	1
C-7	36	-	-	-	-	2
E-7	36	-	-	-	-	1
O-7	36	-	-	-	1	-
I-6	39	-	-	-	-	2
M-8	48	-	-	-	-	1
Q-5	40	-	-	-	2	1
I-1	42	-	-	-	1	1
P-10	42	-	1	-	-	-
Q-3a	48	-	1	1	-	-
Q-3b	48	-	-	-	-	1
Q-4	48	-	-	-	1	1
C-10	54	-	-	-	-	1
Q-7	54	-	-	-	1	-
C-15	63	-	-	-	1	-
no loc.	-	1	-	-	1	3
Total		1	2	3	14	19

Wicker Basketry Impressions

Four wicker impressions included evidence of triple-rod elements in one specimen from an unspecified location, and three examples of multiple-rod elements in specimens from Burials E-6 (25 in.), P-11, and

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another specimen with an unknown provenience.

Coiled Basketry Impression

A single asphalt impression of a coiled basket with a single-rod foundation was found with Burial H-2 at 36 in. This specimen, when related to the number of bone awls in the site, provides evidence for coiled basketry during the period of prehistoric occupation.

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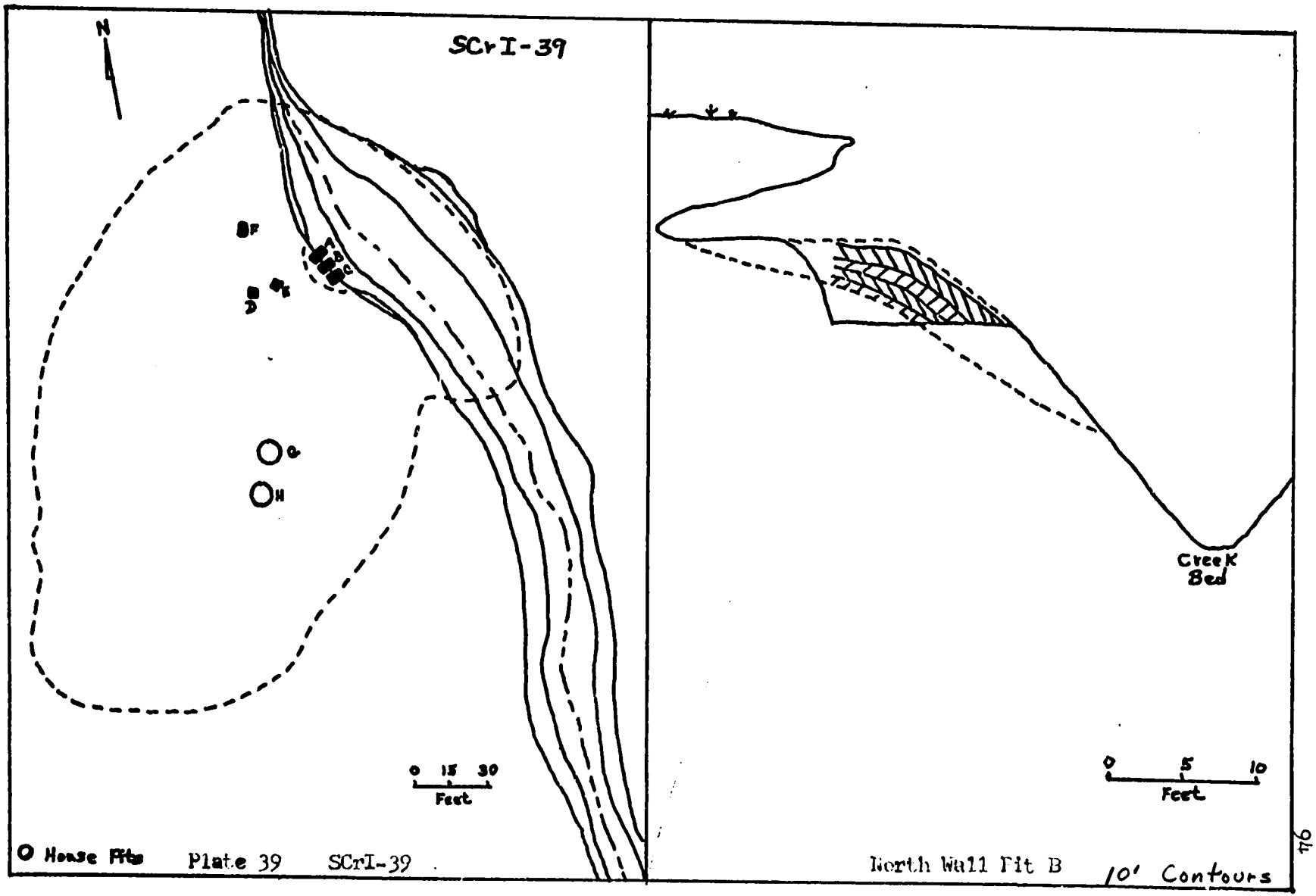

SCrI-39, Forney's Cove

Site 39 is located in Forney's Cove on the west side of an unnamed creek. The slope of the canyon is covered with a talus deposit of shell midden which has partly eroded out a natural cave in the volcanic rocks near the rim. Some Catalina Cherry trees (Prunus Lyonii) and Holly-Leaf Cherry (P. ilicifolia) grow on the slopes. Eight pits of varying sizes and depths, numbered A-H, were dug by the University party at the mouth of the cave.

Burials

Five burials were recovered between 6 and 14 in. in Pits A, B, C, and H. All were flexed toward the west in prone position.

Table 24
Burial Tabulations, Site 39

Burial No.	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
C-1[1]	6	Fl	NW	Pr	A		X	-
B-1[1]	10	Fl	W	Pr	A		-	-
A-1	12	Fl	SW	Pr	A		-	-
H-1	12	Fl	NW	Pr	C		-	-
B-2[1]	14	Fl	W	Pr	A		X	-

Chipped Stone Artifacts

Projectile Points

All three chert specimens were recovered from the surface of the site. They consisted of one Type 2b and 2 Type 6c examples.

---

[1]These burials were wrapped in mats of surf grass.

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Plate 40 SCnI 39

West Wall Pit E

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Drills

Five drills were recovered from the site surface. They consisted of one Type 1, 2 Type 2, and 2 Type 4 specimens of siliceous stone.

Core Choppers

Two quartzite core choppers were recovered from the surface of the site.

Ground Stone Artifacts

Mortars

One complete Type 9 mortar was recovered from the site. Nineteen sandstone fragments and one lava fragment were unclassifiable. All specimens came from the surface or from unspecified locations.

Pestles

Eight pestles were recovered, 3 of them in fragmentary condition.

Table 25
Pestle Data, Site 39

Burial No.	Depth in.	Type 1a	1b1	2a	Indeterminate
surface	-	1	1	1	1
C-1	6	1			
Total		2	1	1	4

Doughnut Stones

Six doughnut stones were recovered from the site, two from the surface, one from Pit D at 29 in., and 3 from unspecified locations.

Miscellaneous Stone Artifacts

This category includes hammerstones (HS), abrading stones (AS), grinding slabs (GS), and asphalted boiling pebbles (AP).

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Table 26
Miscellaneous Stone Artifacts, Site 39

Pit or Burial	Depth in.	HS	AS	GS	AP
surface	-	4	2	1	7
C-1	6	1	-	-	1
D	21	-	-	-	34
A	no loc.	-	-	-	1
Total		5	2	1	43

Shell Artifacts

Shell Bead

A single Type 10b shell bead was collected from the surface.

Bone Artifacts

Bird Ulna Awl

This Type A4aII bird ulna awl specimen was found in Pit E at 56 in. and is 14 cm. long.

Fish Bone Bead

A single specimen of a Type CC5 fish vertebra bead was found at an unspecified location.

Woven Materials

Matting

Twined matting fragments of bunched surf grass (Phyllospadix spp.) were found around three burials, but only those from Burial B-2 at 14 in. were saved. The warp and weft consisted of two strands with a twist down to the right.

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Miscellaneous Artifacts

Clay Pipe Bowl Fragment

A European white clay pipe bowl with a broken stem and bowl was found at an unspecified location. It has no distinguishing marks. The specimen is 2.9 cm. thick and has an oval cross-section.

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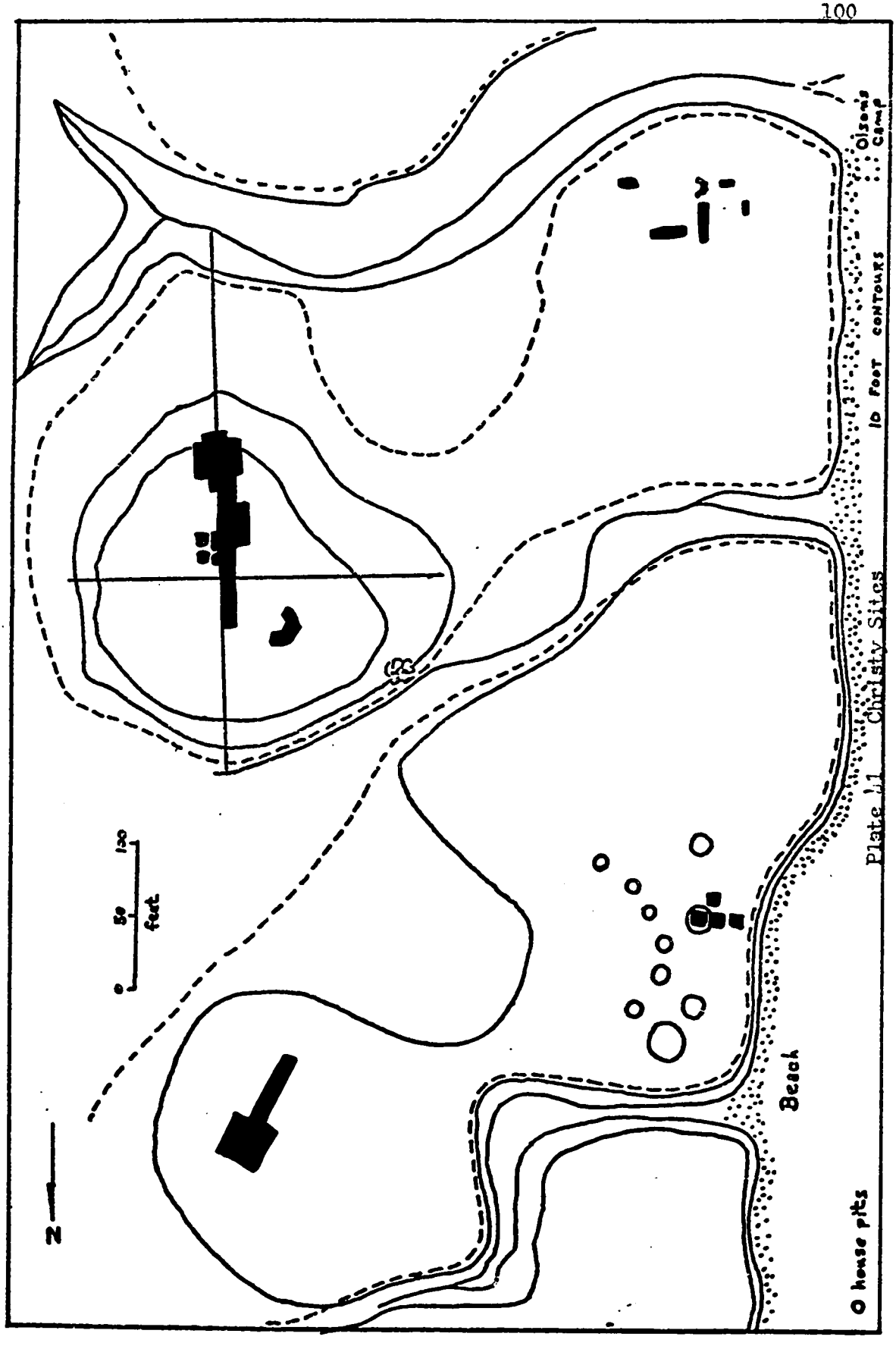

Plate 11 Christy Sites

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SCrI-81, Christy's Beach

Site 81, located on the west end of Santa Cruz Island is located on a flat alluvial terrace above the 50 ft. high seacliff at Christy's Beach. Today, only wild annual grasses cover the shell midden deposit. Olson conducted excavations here from June 23 to 25, 1927, in cooperation with the Santa Barbara Museum of Natural History. Two pits, A and B, were dug to a depth of 63 in. The small cemetery revealed what Rogers (1929, 320) believed was the latest occupation of the locality.

Burials

Seven burials were recovered from a small cemetery. All those with data were flexed on the right side and were oriented toward the east or north-east.

Table 27
Burial Tabulations, Site 81

Burial No..	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
B-1	16	Fl	E	RS	A		X	-
B-3	16	Fl	E	RS	A		X	-
B-4	22	Fl	NE	RS	A		X	X
B-2	48	Fl	NE	RS	A		-	-
A-2	0-58	-	-	-	A		-	-
A-3	0-61	-	-	-	A		-	-
A-1	no loc..	-	-	-	A		-	-

Ground Stone Artifacts

Mortars

One Type 1a mortar and three indeterminate mortar fragments were recovered from the surface. Four fragments of a third indeterminate specimen were found with Burial A-2, 0-58 in.

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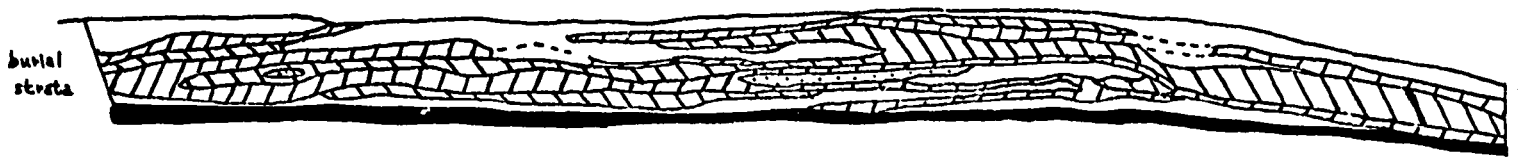

Plate 12 SCnI 31

East Wall Pit A Sections 17 In

Pestles

Six pestle fragments were collected from the surface. They were all of indeterminate type, but one had been used as a mano, having one side surface ground smooth. A seventh indeterminate fragment was recovered from Burial A-2, 0-58 in.

Miscellaneous Ground Stone Artifacts

Four grinding slab fragments were collected from the surface, and three more came from Burial A-3, 0-61 in. All were of indeterminate type. Fifty-one basket pebbles were recovered with Burial A-2, 0-58 in., while a single specimen was found on the surface. A core or pink quartz was collected on the surface, and a doughnut stone measuring 4.5 cm. high and 8.7 cm. in diameter, was recovered from Burial A-3, 0-61 in.

Shell Artifacts

Three specimens of modified Haliotis rufescens shell were recovered from Burial A-3, 0-61 in. All had traces of asphaltum on their interior surfaces.

Bone Artifacts

The only modified animal bones found in the site consisted of an undecorated bird bone tube, found on the surface, and unidentified bone implement fragments from Burial A-3, 0-61 in.

Fibrous Materials

A single mass of matted surf grass (Phyllospadix spp.) was recovered from Burial A-3, 0-61 in. A cord of the same material was found with the mass and consisted of two-ply string twisted to the right.

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SCrI-82, Christy's Beach

Site 82 is located about 100 yds. west of Site 81, on the edge of the 50 ft. high sea cliff above Christy's Beach. Between June 26 and 30, 1927, the University of California and the Santa Barbara Museum of Natural History conducted joint excavations on the site. The site is a low mound of shell midden soil, on which wild annual grasses grow. Five pits, L-P, were dug to a maximum depth of 68 in. Probably Sites 81 and 82 were continuous parts of a large single site.

Burials

Fourteen burials were recorded from Site 82. They were typically flexed prone individuals with heads oriented to the west.

Table 28
Burial Tabulations, Site 82

Burial No.	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
N-2	11	Fl	W	Pr	A		X	X
M-3	14	-	-	-	-		X	-
N-3	20	-	-	-	C		X	-
L-12	32	-	-	-	A		X	-
L-5	37	-	-	-	I		X	X
L-2	39	-	-	-	A		-	-
L-3	44	Fl	W	Pr	A		X	-
L-1	45	Fl	W	Pr	A		X	X
L-4	45	Fl	W	Pr	A		X	X
L-10	48	Fl	W	Pr	A		X	-
M-2	54	-	-	-	-		-	-
L-9	62	Fl	N	Pr	-		X	-
L-8	no loc.	-	-	-	A		X	-
M-1	no loc.	-	-	-	-		-	-

Chipped Stone Artifacts

Drills

Thirty-four chert drills were recovered from the site, 16 from an unspecified depth in Pit C and 18 from Burial L-1, 45 in. Thirty-two

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specimens, including all of those associated with burial, were of Type 1. One specimen each of Types 2 and 3 was recovered.

Ground Stone Artifacts

Doughnut Stone

A single nephrite doughnut stone fragment from Burial L-2, 39 in., is 7.5 cm. high and 8.0 cm in diameter.

Pestles

A pestle fragment of indeterminate type was recovered from Burial L-2 at 39 in. Two other fragmentary specimens were found at an unspecified location on the sea cliff. One of these was identifiable as Type 2a and was 5.2 cm. in diameter.

Mortars

Two mortar fragments were found. A Type 1a specimen, from an unspecified location on the ocean cliff, was reused after breakage. A secondary depression had been worn into the original bowl. A second indeterminate fragment was found at 39 in. within Burial L-2.

Miscellaneous Stone Artifacts

Five grinding stones, 2 abrading stones, 11 asphalted pebbles and 1 ocher lump were recovered from the site at varying locations.

Table 29
Miscellaneous Stone Artifacts, Site 82

Burial No.	Depth in.	Grinding slabs	Abrading stones	Asphalted pebbles	Ocher lumps
surface	-	3	2	3	-
M-13	14	1	-	-	-
L-2	39	-	-	8	-
L-1	45	1	-	-	1
Total		5	2	11	1

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Shell Artifacts

Shell Beads

A total of 20 shell beads, representing 4 types, was recovered from the site.

Table 30
Shell Beads, Site 82

Pit or Burial	Depth in.	Type 1a	1f	5c	11a
L-1	45	7	5	-	-
C	no loc.	-	-	7	1
Total		7	5	7	1

Haliotis Ornaments

Three Haliotis ornaments were found with Burial L-1 at 45 in. and included one specimen each of Types C1j, C1, and C1a.

Miscellaneous Shell Artifacts

These specimens include one whole Haliotis cracherodii shell with traces of asphaltum on the interior surface from Burial L-2 at 39 in. A cache of 503 large clean Olivella shells were found with the same burial.

Bone Artifacts

All of the miscellaneous bone objects were found at an unspecified location near the sea cliff edge. They include whalebone fragments, a Type P3b mammal rib matting needle fragment, an awl tip, and a Type EE1a bird bone tube with one end cut off.

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Fibrous Materials

Basketry

Both specimens were found with Burial L-1 at 45 in. and were preserved as asphaltum impressions. One specimen consisted of fine tightly-woven wickerwork with both single and two-rod warps. The second example was finely twined down to the right.

Cordage

A small piece of three-strand cord with a right-hand twist was recovered from Burial L-1, 45 in. It was presumably made of surf grass (Phyllospadix spp.). The second specimen came from the same location and consisted of two-strand cord twisted to the right.

Soaproot Brush

A soap root (Chlorogalum pomeridianum) fiber brush was recovered from Burial L-1 at 45 in. The fibrous husks of the plant were folded over once, bound with twine, and the bend covered with asphaltum, which served as a handle.

Miscellaneous Fibrous Material

Two fragments of wood were recovered, one from Burial L-1 at 45 in., and one at an unspecified location on the sea cliff.

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SCrI-83, Christy's Beach

The western end of Santa Cruz Island is characterized by the large shallow indentation of Christy's Beach, created by ocean currents in the Santa Cruz Channel being deflected by the island. Warm damp winds from the Pacific often blanket the area with fog during the summer months. Cerbada Creek, the major drainage outlet for the west end of Santa Cruz Island, flows into the ocean at Christy's Beach and provides a year-round supply of water.

The flat valley at the mouth of Cerbada Creek expands to the north over a one-half square mile area. Eight sites were noted there by Rogers (1929, 318-319). The largest of these sites, Site 83, is located on the north bank of Cerbada Creek, about 300 yds. back from the beach. The low mound of shell midden is roughly circular.

Site 83 was the subject of two summer's excavations. The University expedition dug 31 pits, numbered A-Z and AA-EE, to varying depths up to 88 in. Pit A was located in a cemetery area. It was eventually expanded on an east-west axis into a 109-foot trench of five sections, numbered AI-AV, which were five feet wide. Additional pits were enlarged to cover the entire cemetery. Pits R-T were dug through the shell midden near the beach above Olson's camp, several hundred feet west of the other excavation units. Pits V and W were dug through house depressions in the same area.

Stratigraphy

The four sections of Trench A provided a continuous record of the site's stratigraphy on a north-south axis through the center

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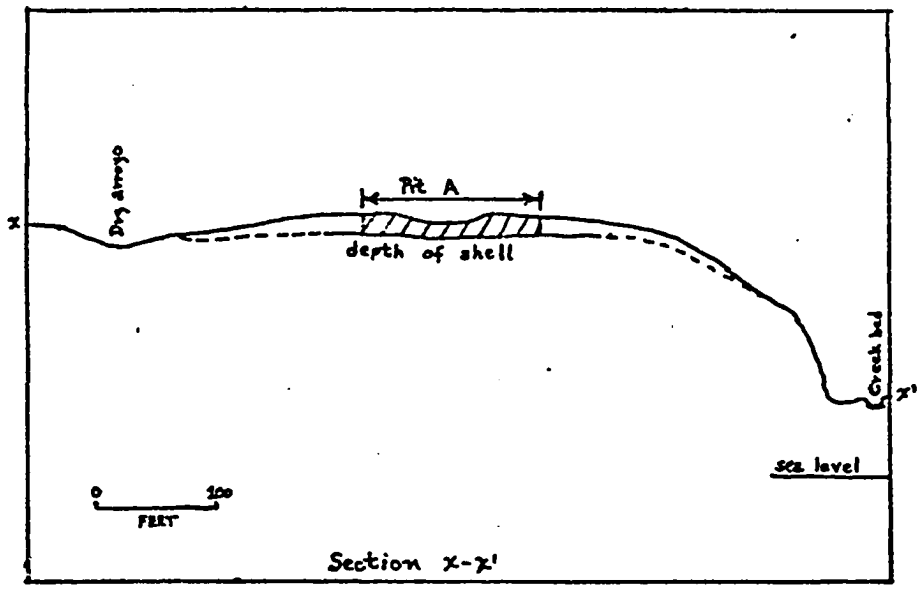
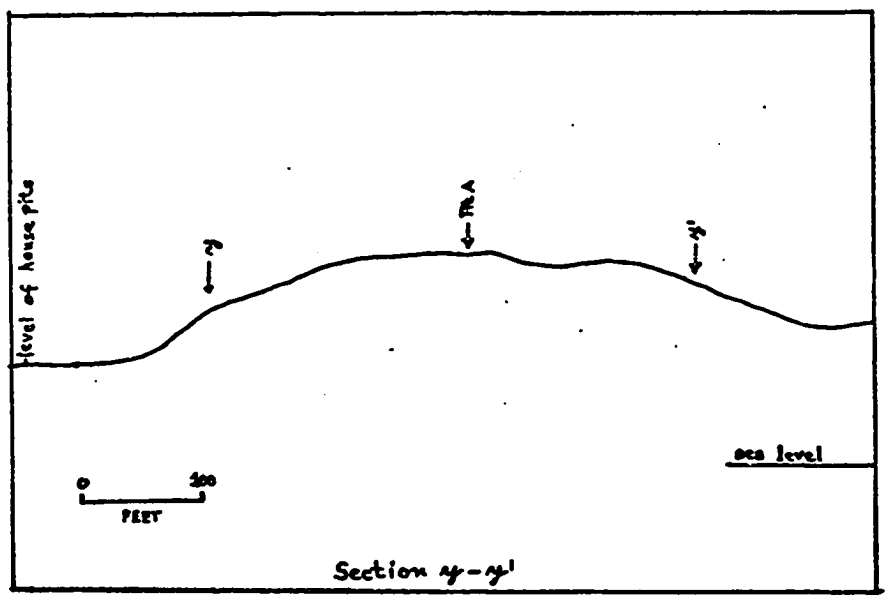


Section x-x'



Section y-y'

Plate 43 SCrI-83

Sections

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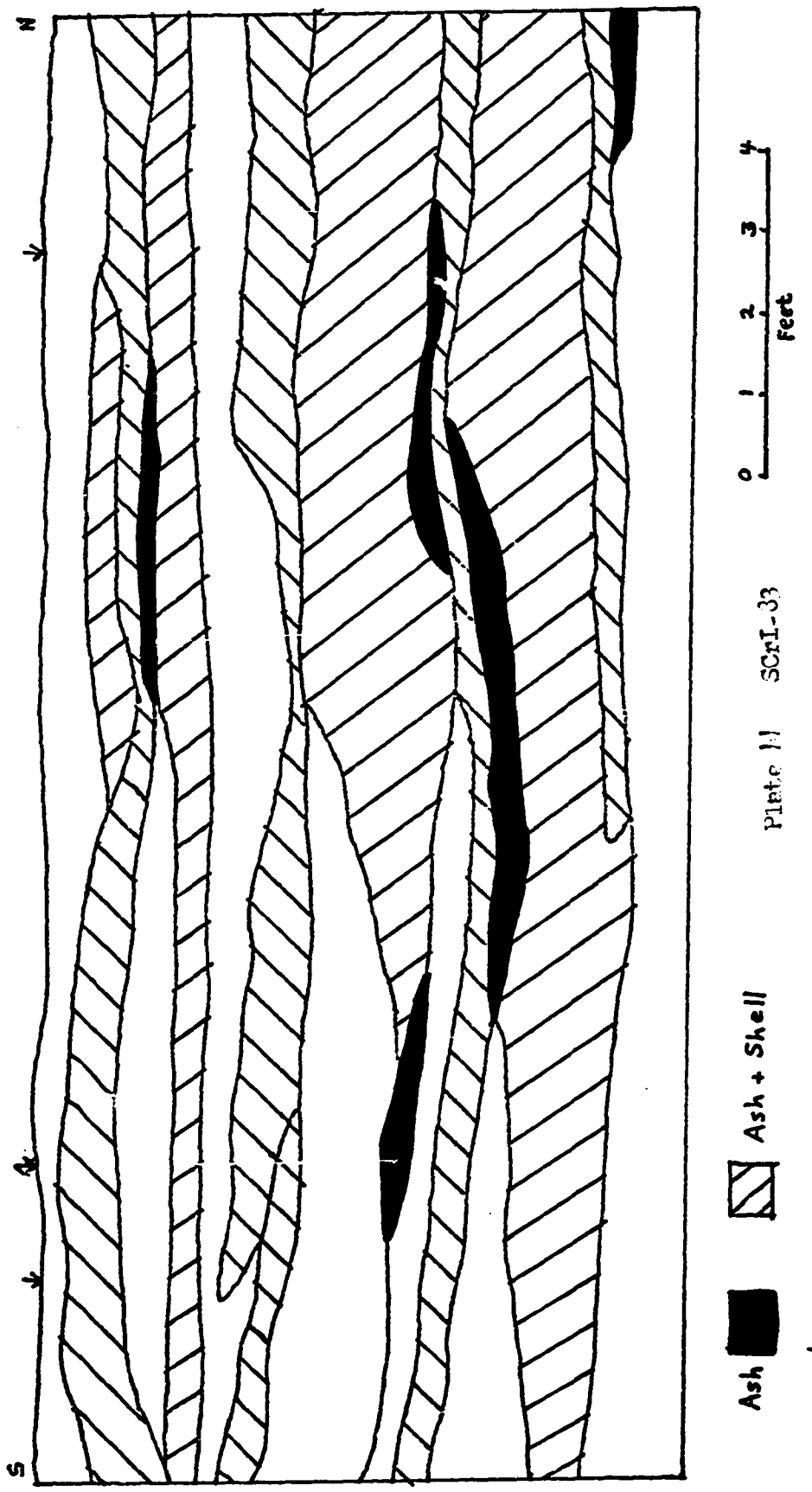

Plate II 5CrI-33

Pit A Section I

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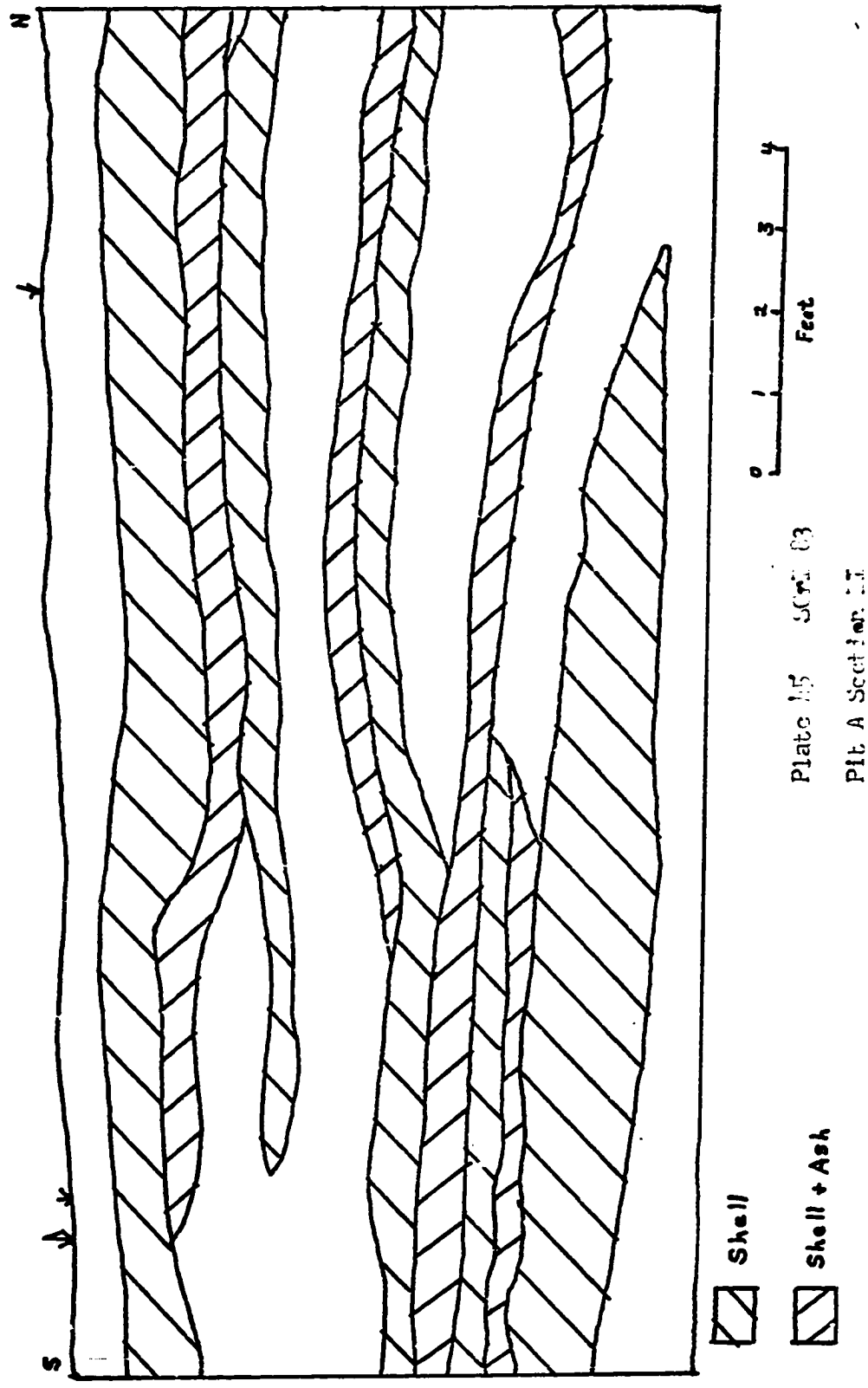

Plate 15 Scott 83

Pit A Section 17

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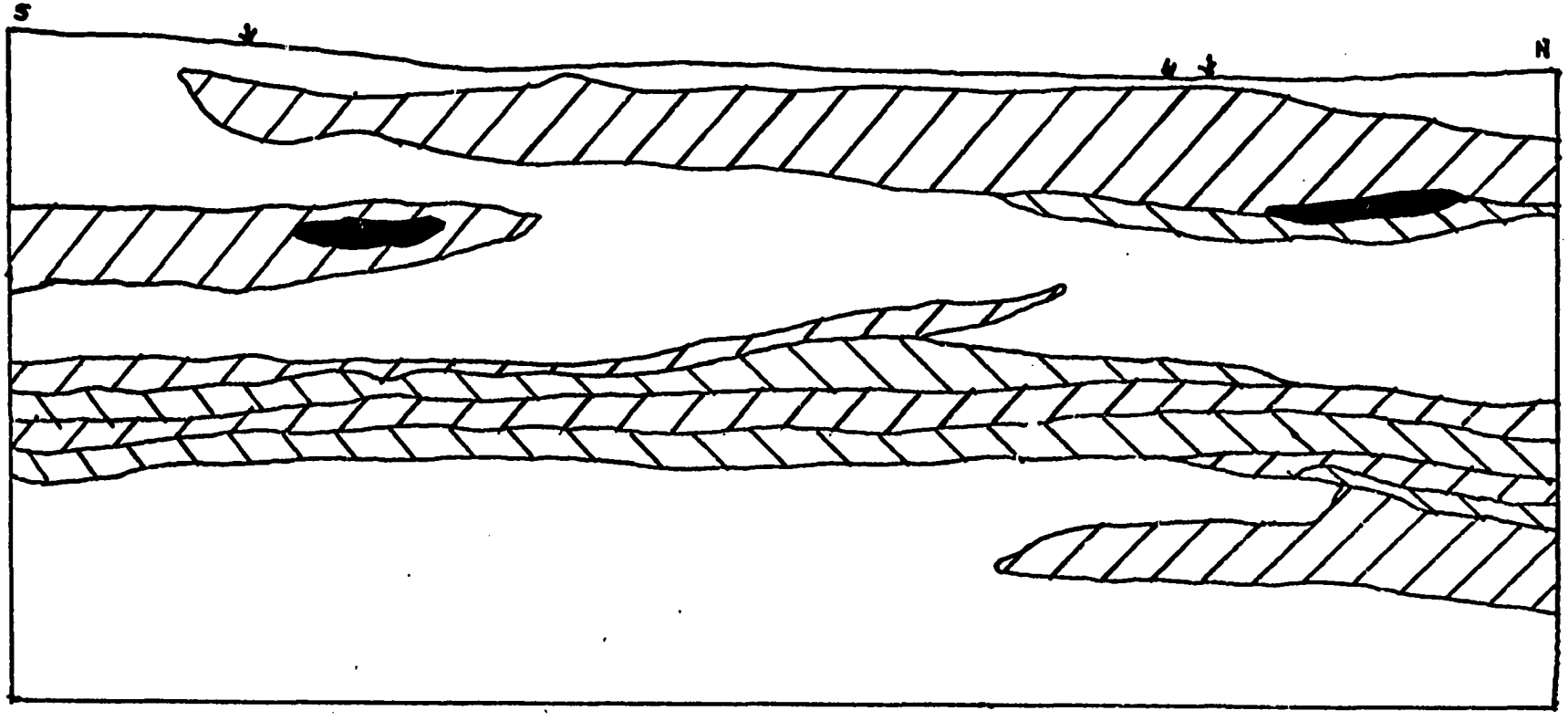

Ash

Shell

Shell + Ash

0 1 2 3 4

Feet.

Plate 16 SCrI 63

Pit A Section III

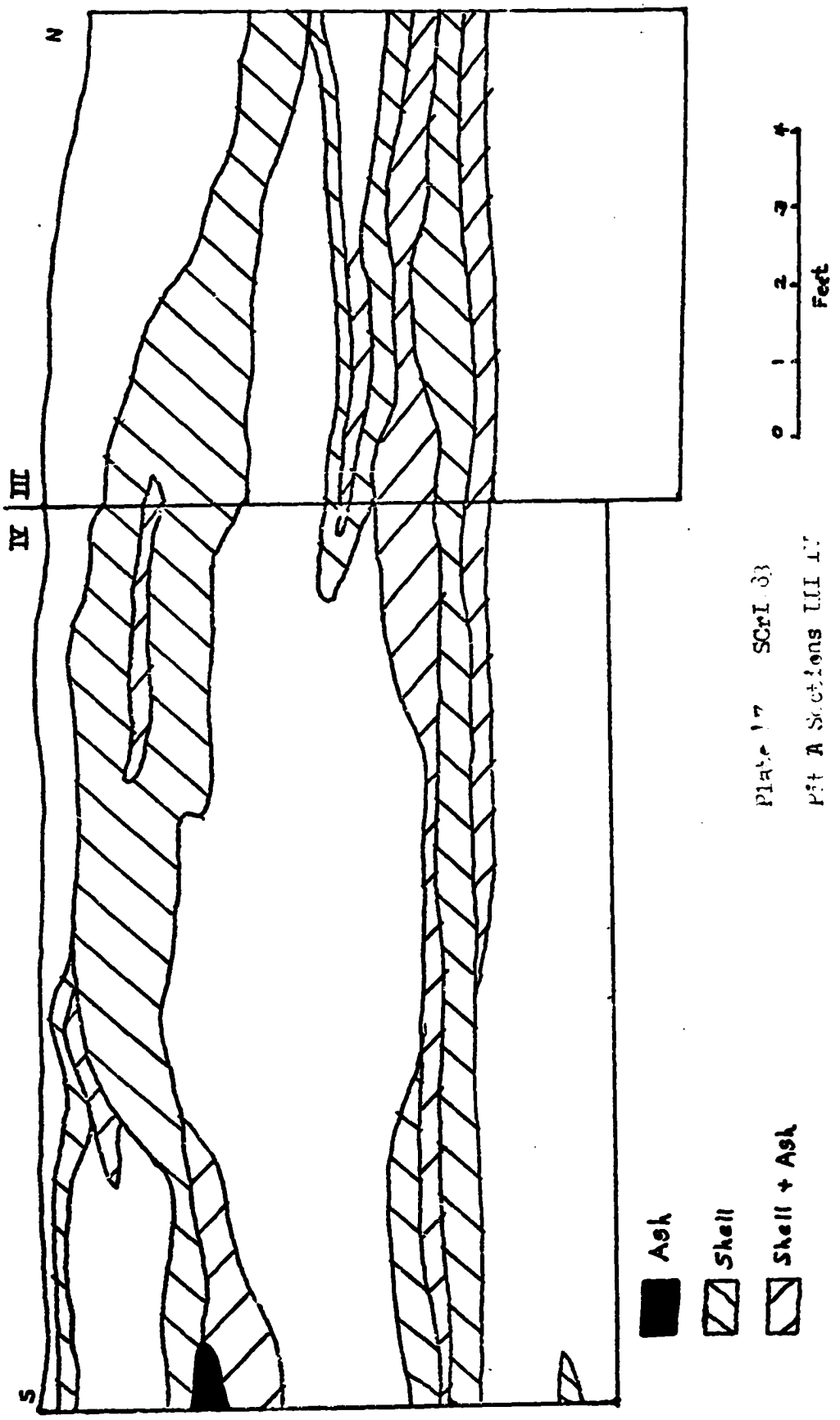

Plate 17 SCrI 33

Pit A Sections III IV

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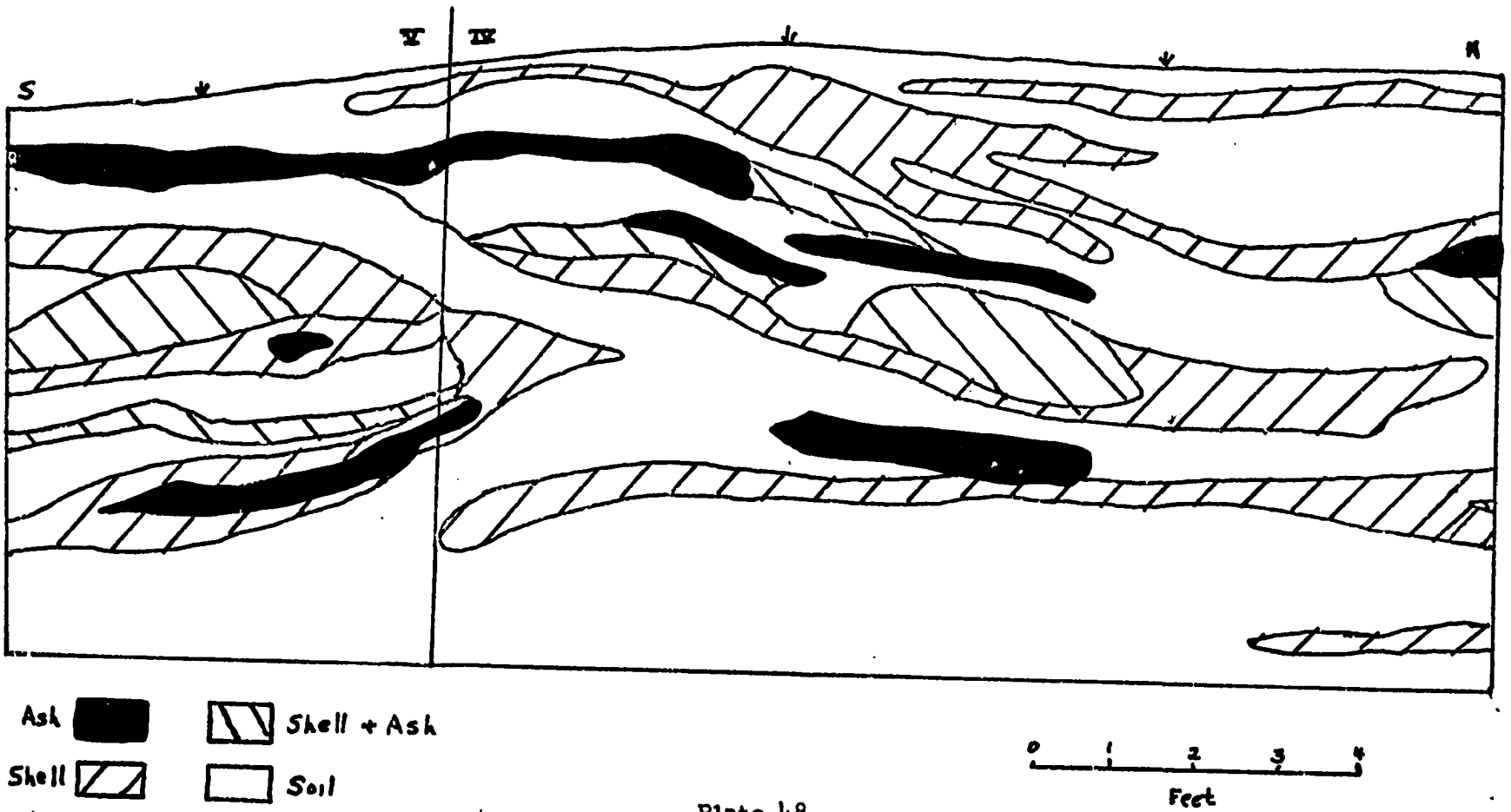

Plate 18

Pit A Section IV V

SCALE

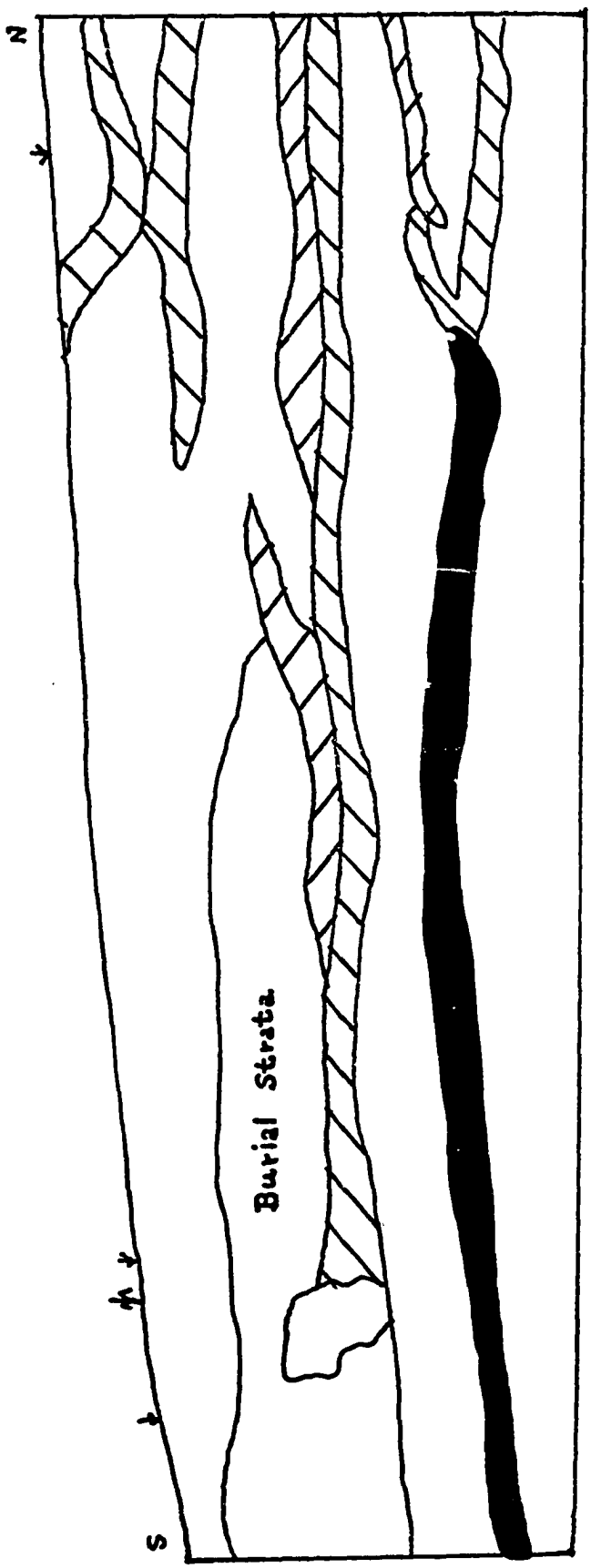

Plate 49 SCrI-83

Pit A Section V

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of the site. Olson noted complex stratification consisting of alternating layers of sterile soil, shell and mixed midden soil. There were a number of ash lenses scattered throughout the deposit which were probably the remains of hearths.

Burials

A total of 201 burials was recovered between 8 and 88 in., a large number of which have incomplete data. Burials were primarily flexed, oriented between north and west, and in prone or side position.

Table 31
Burial Tabulations, Site 33

Burial No.	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
F-10	8	-	-	-	-		-	-
H-1	8	-	-	-	A	F	X	-
J-1	8	-	-	-	A	M	X	X
W-1	8	-	-	-	A		X	-
DD-2	8	Fl	W	LS	A		-	-
G-2	9	Fl	NW	RS	A	F	-	-
C-1	10	-	-	-	I		X	X
E-1	10	Fl	WNW	Pr	A		-	-
N-5	10	Fl	NW	LS	A		X	-
Q-1	10	Fl	N	Pr	A		X	-
AA-1	10	Fl	NNW	Pr	A	M	-	-
B-1	12	-	-	-	I		-	-
C-18	12	-	-	-	A		-	-
D-3	12	-	-	-	I		-	-
J-2	12	Fl	NNW	Pr	A	M	-	-
J-11	12	-	W	Pr	I		X	-
N-8	12	Fl	W	LS	A		X	X
AA-2	12	Fl	NNW	Pr	A		-	-
B-2	14	-	-	-	A	F	-	-
C-4	14	-	-	-	A	F	-	-
C-5	14	-	-	-	A	F	-	-

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Table 31 (continued)

C-6	14	Fl	NW	RS	A	F	-	-
C-7	14	Fl	NW	RS	A	F	X	-
D-1	14	Fl	NW	Pr	A		-	-
D-2	14	Fl	N	Pr	A	M	X	X
J-3	14	-	-	-	I		X	X
J-4	14	-	-	-	A		-	-
J-7	14	Fl	W	LS	A	F	-	-
N-1	14	-	-	-	-	F	-	-
N-9	14	Fl	NW	Pr	A		-	-
C-3	15	-	-	-	A		X	-
B-3	16	-	-	-	A	M	-	X
C-2	16	-	-	-	A		X	-
C-19	16	-	-	-	A	M	-	-
F-1	16	-	-	-	A	F	X	-
J-5	16	-	-	-	A		-	-
J-6	16	-	-	-	A		-	-
B-4	17	Fl	W	Pr	A	M	-	-
B-5	18	Fl	N	Pr	A	F	X	-
B-6	18	-	-	-	A		-	-
C-10	18	-	-	-	A	M	-	-
F-2	18	-	-	-	-	M	X	-
F-12	18	-	-	-	A	M	-	-
F-13	18	-	-	Pr	A	F	-	-
G-1	18	Fl	-	RS	Y	F	-	-
I-3	18	Fl	NNW	Pr	A		X	-
I-10	18	Fl	NNE	Pr	A		X	-
I-11	18	Fl	N	Pr	A		X	-
I-12	18	-	-	-	I		X	-
J-13	18	-	-	-	A		X	X
J-14	18	-	-	-	A		X	-
N-2	18	Fl	NW	RS	Y		X	-
N-3	18	Fl	NW	Pr	A	F	X	X
N-4	18	Fl	NW	Pr	C		X	-
N-10	18	-	-	-	I		X	-
X-1	18	Fl	NW	LS	I		X	-
B-7	20	Fl	N	Pr	A		X	-
C-8	20	-	-	-	A		-	-
C-9	20	-	-	-	A		-	-
C-20	20	-	-	-	A	M	-	-
D-5	20	-	-	-	-		X	-
F-3	20	-	-	-	A	M	-	-
F-6	20	-	-	-	A	M	X	-
I-2	20	-	NW	Su	A	F	-	-
I-15	20	-	-	-	I		X	X
N-7	20	-	-	-	I		X	-
I-19	21	-	-	-	-		X	-
F-4	22	-	-	-	-		-	-

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Table 31 (continued)

AIII-2	24	-	WSW	-	-		-	-
C-17	24	-	-	-	I		X	X
C-22	24	-	-	-	I		X	X
C-23	24	-	-	-	A		-	-
C-24	24	-	-	-	A	M	X	X
C-25	24	-	-	-	A	M	X	-
C-26	24	-	-	-	A		X	-
F-5	24	-	-	-	I		X	-
F-8	24	Fl	N	Pr	A	M	-	-
F-16	24	-	-	-	A		-	-
I-1	24	Fl	WNW	Pr	A	F	-	-
J-6	24	Fl	W	LS	A		-	-
J-10	24	-	-	-	-		X	-
J-12	24	Fl	WNW	Pr	A		-	-
I-4	26	Fl	NW	Pr	C		-	-
I-8	26	-	-	-	-		X	-
I-14	27	-	-	-	A		X	-
J-8	27	-	-	-	A		X	-
M-6	28	Fl	NW	Pr	A		X	X
D-4	30	-	-	-	A		-	-
F-15	30	Fl	N	-	A	F	-	-
F-17	30	-	-	-	-		X	-
G-3	30	-	-	-	-		X	-
H-2	30	Fl	NNW	Pr	A		X	-
H-3	30	Fl	NW	Pr	A		X	-
I-6	30	-	-	-	-		X	-
I-9	30	-	-	-	-		X	-
I-13	30	-	-	-	C		X	-
J-9	30	Fl	W	Pr	A		X	X
X-2	30	-	-	-	-		X	-
I-17	32	Fl	W	Pr	C		X	-
C-13	36	-	-	-	-		-	-
C-27	36	-	-	-	-		X	-
H-5	36	-	-	-	-		X	-
I-5	36	-	-	-	C		X	-
I-16	36	-	-	-	-		X	-
I-18	36	-	-	-	-		X	-
I-20	36	-	-	-	C		X	-
I-7	39	-	-	-	-		X	-
Z-1	42	-	-	-	-		X	-
Y-2	48	-	-	-	-		X	-
EE-1	50	-	-	-	A	F	X	-
X-3	54	Fl	E	Su	A		-	-
S-1	55	-	-	-	-		X	-
X-4	57	Ex	NNE	Su	A		X	X
X-7	57	-	-	Su	A		X	-
O-1	58	-	-	-	-		-	-
AIII-3	60	-	-	-	I		X	-
AIII-4	60	-	-	-	C		X	-
AIII-7	60	Fl	E	RS	A	M	X	X

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Table 31 (continued)

AIII-8	60	-	-	RS	I		X	X
AIII-16	60	-	-	-	A		X	-
K-1	60	-	NNE	RS	A	F	X	X
AIII-1	62	-	-	LS	A	F	-	-
K-2	63	Fl	-	LS	A		X	-
AIII-9	66	-	-	-	A	F	-	-
X-5	66	Fl	S	LS	A		X	X
EE-2	66	Fl	SE	Pr	A	F	X	-
AIII-6	68	Fl	E	Su	A		-	X
K-4	68	Ex	-	Su	C		X	X
L-1	68	Ex	-	Su	A	F	-	-
L-12	68	-	-	-	A		X	-
X-6	68	Ex	S	Su	A		X	-
X-10	68	Fl	-	Su	A		X	-
EE-3	68	Fl	WSW	LS	A	F	-	-
EE-4	68	Ex	-	Su	A	M	X	-
EE-5	68	Ex	S	LS	A		-	-
AIII-17	69	-	-	-	A	M	-	-
X-9	70	Ex	-	-	A		X	-
X-12	70	-	-	-	A		X	-
EE-6	70	Ex	S	LS	A		-	-
EE-7	70	-	-	-	A		-	-
EE-8	70	-	-	-	A		-	-
AIII-10	72	-	E	Su	A		X	X
AIII-11	72	-	-	-	A	F	-	-
AIII-14	72	Fl	NE	LS	C		X	X
AIII-15	72	-	-	-	A		X	-
AIII-18	72	-	-	-	A		X	X
AIV-1	72	Fl	NNW	LS	C		X	-
L-2	72	Fl	-	Su	A	F	X	-
L-8	72	-	-	-	A		X	X
L-9	72	Fl	-	Su	A		X	-
L-11	72	-	-	-	A		X	-
X-11	72	-	-	LS	A		X	X
X-14	72	-	-	-	-		X	-
Y-1	74	Fl	SE	Su	A		X	-
AIV-5	75	-	E	Su	C		X	-
L-4	75	-	-	-	A		X	X
AIV-4	78	Fl	SW	Su	A	M	X	-
AV-1	78	-	NNE	Su	A		X	-
L-3	78	-	-	-	A	F	X	-
L-5	78	Fl	-	Su	A		X	X
L-6	78	Fl	-	RS	A		X	X
L-7	78	Fl	-	Su	A	M	X	-
L-10	78	Fl	-	Su	A		X	-
X-13	78	Ex	-	-	A		-	-
Y-4	79	-	NW	Su	A		X	-
X-15	80	Ex	-	Su	A		X	-
AIV-3	82	Fl	NW	Su	A	F	X	-
X-8	82	Fl	-	LS	A		X	-

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Table 31 (continued)

Y-3	82	-	-	-	A		X	X
AIV-2	88	-	SSW	Su	A	M	X	-
AII-1	no loc.	F1	NNE	Su	A	M	X	-
AIII-5	no loc.	-	SW	Su	A	F	X	-
AIII-12	no loc.	-	E	Su	A		X	-
AIII-13	no loc.	-	-	-	A		X	-
AIII-19	no loc.	-	-	-	A		X	-
AIII-20	no loc.	-	-	-	A		X	-
C-12	no loc.	-	-	-	A		X	-
C-14	no loc.	-	-	-	A		-	-
C-15	no loc.	-	-	-	A		-	-
C-16	no loc.	-	-	-	A	M	-	-
C-21	no loc.	-	-	-	-		X	-
C-28	no loc.	-	-	-	-		X	-
F-7	no loc.	-	-	-	A	M	X	-
F-9	no loc.	-	-	-	-		-	-
F-11	no loc.	-	-	-	A	M	-	-
F-12	no loc.	-	-	-	A	M	-	-
F-18	no loc.	-	-	-	-		X	-
J-15	no loc.	-	-	-	-		X	-
K-3	no loc.	-	-	-	A		X	-
K-5	no loc.	-	-	-	-		-	-
K-6	no loc.	-	-	-	-		X	-
M-1	no loc.	-	-	-	A		X	-
P-1	no loc.	-	-	-	-		X	-
R-1	no loc.	-	-	-	-		X	-
Y-5	no loc.	-	-	-	-		X	-
AA-3	no loc.	-	-	-	-		X	-
CC-1	no loc.	-	-	-	-		X	-
CC-2	no loc.	-	-	-	A		X	-

Animal Burials

Two animal burials were recovered from Site 83. A dog was buried in the northwest corner of Pit O at 18 in. The skull of an island fox, Burial DD-1, was found at an unspecified depth wrapped in mat fragments and with two bone tubes which had been wrapped with string in asphalt. It may be associated with cult practices (Heizer and Howes 1940).

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Chipped Stone Artifacts

Chert Blade

A single blade of yellow chert, measuring 23.6 cm. in length, 7.3 cm. in width, and .8 cm in thickness, was recovered from Burial H-2 at 30 in. The specimen weighs 106 gm. and is covered with traces of red ocher, with asphaltum at one end extending 3.1 cm. up the blade. The blade was probably hafted.

Flake Scrapers

Nine chert flake scrapers were recovered from the site, varying between 7.11 and 100.11 gm. in weight.

Table 32
Flake Scrapers, Site 83

Pit or Burial	Depth in.	No. of specimens
AIII	48	1
X-5	66	3
L-5	78	1
A	no loc.	4

Core Tools

Two picks, one of chert and one of chalcedony, were recovered from unspecified depths in Pit A. Two other core tools of chert and chalcedony were found respectively in Burial AIII-18, 72 in., and in Pit IV at an unspecified depth.

Ground Stone Artifacts

Steatite Beads and Tubes

Sixteen steatite beads of 3 types were recovered from Site 83.

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Table 33
Steatite Beads, Site 83

Burial No.	Depth in.	Type 2a	8a
H-2	30	2	3
L-4	75	11	-
Total		13	3

Steatite Ornaments

All three Type 1 specimens were associated with Burial H-2 at 30 in. and were approximately 4 cm. long.

Steatite Pipes

Two Type 1 steatite pipes were recovered from Burial X-6 at 68 in. One specimen was 15.2 cm. long, 1.9 cm. in external diameter, and 3.9 cm. in internal diameter. The other specimen was 22.5 cm. long, 1.7 cm. in external width, and 3.0 cm. in internal width.

Steatite Bowls

A complete polished steatite bowl, measuring 13.0 cm. in diameter, 11.0 in height, with a bowl depth of 9.6 cm., and bowl width of 8.5 cm., was not assigned provenience. The bowl is globular with rounded bottom, convex sides, and a recurved rounded rim. External decorative incisions just below the rim consist of a single horizontal line with a zig-zag line running parallel to it and beneath it. The bottom is fire-blackened and coated with asphaltum.

A fragment of a second steatite dish from Burial I-7 at 39 in. is 2.6 cm. thick and has traces of rough scratch marks on both internal and external surfaces.

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Incised Sandstone Pendant

This specimen is .8 cm. thick and was recovered from Burial AIII-18 at 72 in. It is a flat object of elongated ovate shape. A waisted area near the center is coated with asphaltum, and a single perforation was begun at one end. Both faces are covered with numerous incisions, usually with a series of two parallel lines with connecting cross-lines, like the rungs of a ladder.

Mortars

Forty-three mortars of four types were recovered from Site 83. Several specimens have grooved rims or were repaired with asphaltum.

Table 34
Mortar Tabulations, Site 83

Pit or Burial	Depth in.	Type 1b2	7b	8a	8b	8c	Indeterminate fragments
surface	-	1	1	-	-	-	4
AII	0-24	-	-	1	-	-	-
AIV	0-24	-	-	-	-	1	2
A	0-24	-	-	-	-	-	1
L	0-30	-	-	-	-	-	4
F-10	8	-	1	-	-	-	-
W-1	8	-	-	-	-	-	1
C-3	15	-	-	-	-	-	1
J-14	18	-	-	-	-	-	1
J-6	24	-	-	-	-	-	2
J-12	24	-	-	-	-	-	1
AII	24-48	-	-	-	-	-	1
AIV	24-48	-	-	1	-	-	-
I-8	26	-	-	-	-	-	2
G-3	30	-	-	-	1	-	1
Q-2	30	-	-	-	-	-	1
L	30-60	-	-	1	-	-	-
C-27	36	-	-	-	-	-	2
H-5	36	-	-	-	-	-	1
I-16	36	-	-	-	-	-	1
AII	72-90	-	-	-	-	-	1
Y-3	82	-	-	-	-	-	1
K-5	no loc.	-	-	-	-	-	1
AIV	no loc.	-	-	-	-	-	1
L	no loc.	-	-	-	-	-	2
-	no loc.	-	-	-	1	-	2
Total		1	2	3	2	1	34

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Pestles

There were 31 pestles of 5 different types recovered from the site.

Table 35
Pestle Distribution, Site 83

Pit or Burial	Depth in.	Type 1a	1b	2	4a	4b	Indeterminate
surface	-	-	-	1	1	-	1
A	0-12	-	-	-	-	-	1
AII	0-12	1	-	-	-	-	-
AIV	0-24	-	-	1	-	-	1
Q-1	10	-	-	-	-	1	-
S	20	-	-	1	-	-	-
J-12	24	-	-	1	-	-	-
C	24	-	-	1	-	-	1
AI	24-48	-	-	1	-	-	1
AIV	24-48	-	-	1	-	-	-
I-8	26	-	-	-	-	-	1
C-27	36	1	-	-	-	-	-
L	30-60	-	1	-	-	-	1
AIII	48	-	-	-	-	-	1
AIV	48	-	-	-	-	-	1
AI	48-87	-	-	1	-	-	-
K-5	no loc.	1	-	-	-	-	-
AA-3	no loc.	-	-	-	-	-	1
A	no loc.	1	-	-	-	-	-
L	no loc.	-	-	-	-	-	1
-	no loc.	3	-	2	-	-	-
Total		7	1	10	1	1	11

Doughnut Stones

Fourteen doughnut stones were recovered from Site 83 between the depths of 8 and 78 in.

Table 36
Doughnut Stone Distribution, Site 83

Pit or Burial	Depth in.	No. of specimens
W-1	8	1
AIV	0-24	1
L	0-30	2
C-27	36	1
AII	48-72	1
X-10	68	3

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Table 36 (continued)

L-5	78	1
AIV	no loc.	1
A	no loc.	2
-	no loc.	1

Miscellaneous Ground Stone

Olson's party recovered 32 hammerstones (HS), 34 abrading stones (AS), and 135 asphaltum-covered pebbles (AP) from the site.

Table 37
Miscellaneous Stone Artifacts, Site 83

Pit or Burial	Depth in.	HS	AS	AP
surface	-	-	1	-
AII	0-24	2	1	-
AIV	0-24	3	2	25
A	0-24	1	1	-
H-1	8	-	4	-
W-1	8	-	-	2
N-5	10	-	1	-
C-3	15	1	3	-
J-6	24	-	1	1
AIII	24-48	-	-	8
I-8	26	-	1	-
AIII-18	30	1	-	-
G-3	30	-	1	-
Q-2	30	-	1	-
L	30-60	4	1	2
C-27	36	2	2	-
I-16	36	1	-	-
AII	48-72	-	-	24
X-6	68	1	-	-
AII	72-90	1	-	2
Y-3	82	-	1	-
AIV	no loc.	4	3	27
K-5	no loc.	2	3	1
P-1	no loc.	2	1	-
AA-3	no loc.	1	1	-
A	no loc.	-	1	20
L	no loc.	-	1	1
R	no loc.	1	-	-
T	no loc.	1	1	-
-	no loc.	4	2	22
Total		32	34	135

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Stone Maul

A single stone maul was found at an unspecified location and was 14.1 cm. long, with a tapering diameter of 6.7 to 4.0 cm.

Ocher Lumps

Seven small lumps of ocher were recovered from Burial L-5 at 78 in. and an eighth specimen was found in Pit A at an unspecified depth.

Asphalt Lumps

Three lumps of asphalt were recovered from the site, one in Pit AIII at 48 in., one from Pit AIV from 0-24 in. with a mass of shell and bone, and one from Burial K-5 at an unspecified depth.

Shell Artifacts

Shell Beads

Three types of shell beads and bead blanks, totaling 444, were recovered from the site.

Table 33
Shell Bead Distribution, Site 83

Burial No.	Depth in.	Type 6a	Type 10a	Type 23b	Whole Olivella
AIII-18	72	-	-	1	-
L-4	75	1	1	91	158
L-5	78	-	-	38	-
X-13	78	-	-	153	-
X-15	80	-	-	1	-
Total		1	1	284	158

Haliotis Ornaments

All 7 specimens were recovered from Burial AIII-18 at 72 in. and were all of H. cracherodii shell. They consis of two Type C1,

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one Type C1f, Two Type C1j, and two indeterminate specimens, all ranging from 4.8 to 2.9 cm. in diameter.

Clam Shell Ornaments

Six specimens of Tivela stultorum shell have punctate designs on one face. Those from Burial AIII-18 have red ocher rubbed into the punctations.

Table 39
Clam Ornaments, Site 83

Pit or Burial	Depth in.	Type C1j	C6j	F13j	I1j	O1f	Blanks
L-12	68	1	-	-	-	-	-
AIII-18	72	6	3	1	1	1	-
L-5	78	1	-	-	-	-	-
X-15	80	1	-	-	-	1	-
A	no loc.	-	-	-	-	-	9
Total		9	3	1	1	2	9

Shell Fishhooks

Six Mytilus fishhooks of two types were recovered from Burial AIII-18, 72 in., and consist of two Type 1, two Type 2, and two blank specimens. One specimen was coated with asphaltum for 2.5 cm. along the end of its shank.

Whole Shell Containers

Twnety Haliotis dishes, 3 mussel shells, and one limpet specimen were recovered from the site and contained ocher or coatings of asphaltum.

Table 40
Whole Shell Containers, Site 83

Pit or Burial	Depth in.	Haliotis cracherodii	Haliotis rufescens	Haliotis corrugata	Mytilus	Limpet
C	24	2	-	-	-	-
Q-2	30	-	-	-	-	1
X-5	66	1	-	-	-	-
L-4	75	3	-	-	1	-

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Table 40 (continued)

L-5	78	2	-	-	-	-
Y-3	82	6	2	2	-	-
A-III-20	no loc.	-	-	-	1	-
A	no loc.	2	-	-	1	-
Total		16	2	2	3	1

Bone Artifacts

Bone Beads

Eleven mammal bone tubes were recovered from the site, 5 specimens from Burial L-7 and six specimens from Burial X-13, both at 78 in. All specimens were coated with asphaltum and some had shell bead impressions on the surface. They were probably once inlaid. The tubes range from 1.5 to 2.2 cm. in diameter and 3.5 to 5.7 cm. in length.

Bone Pendants

Four elongate bone pendants with highly polished surfaces were perforated at one end for suspension. One specimen from Pit L, 72 in. had serrated edges, while the two specimens from Burial AIII-18, 72 in., were decorated with ocher filled punctations. An indeterminate fragment was recovered from Burial L-4, 75 in.

Miscellaneous Bone Artifacts

Two bone gorges, a cetacean vertebra mortar, 4 Type QQ2 bone atlatl hooks with punctate designs, 2 cannon bone awls, and 4 spatulate whalebone objects were recovered from the site.

Table 41
Miscellaneous Bone Artifacts, Site 83

Pit or Burial	Depth in.	Type A1d	E2	T1g	BB1	QQ2a	QQ2b	fragments
L	0-30	-	-	-	-	-	-	2
W-1	8	-	1	-	-	-	-	-
AIII	24-48	-	1	-	-	-	-	-
AIII	48	-	-	-	-	-	-	1
AIII-18	72	2	1	-	-	1	2	1

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Table 41 (continued)

L-4	75	-	-	2	1	1	-	-
X-15	80	-	-	-	-	-	-	2
K-5	no loc.	-	1	-	-	-	-	-
AIV	no loc.	-	-	-	-	-	-	1
Total		2	4	2	1	2	2	7

Fibrous Materials

Mat Fragment

A single mat fragment was recovered from Burial AIII-18, 72 in., and consisted of a two-ply flexible warp element and a two-ply two-strand weft element.

Asphaltum Basketry Impressions

Three impressions of twined basketry were found respectively on the surface, with Burial T-14 at 18 in., and at an indeterminate depth.

Pottery

Two pottery sherds from the same pot were recovered from Pit AIV at an unspecified depth. The rim fragment was 1.2 cm. thick, and the body fragment measured 2.5 cm. The sherds were red and granular, with both surfaces blackened by fire.

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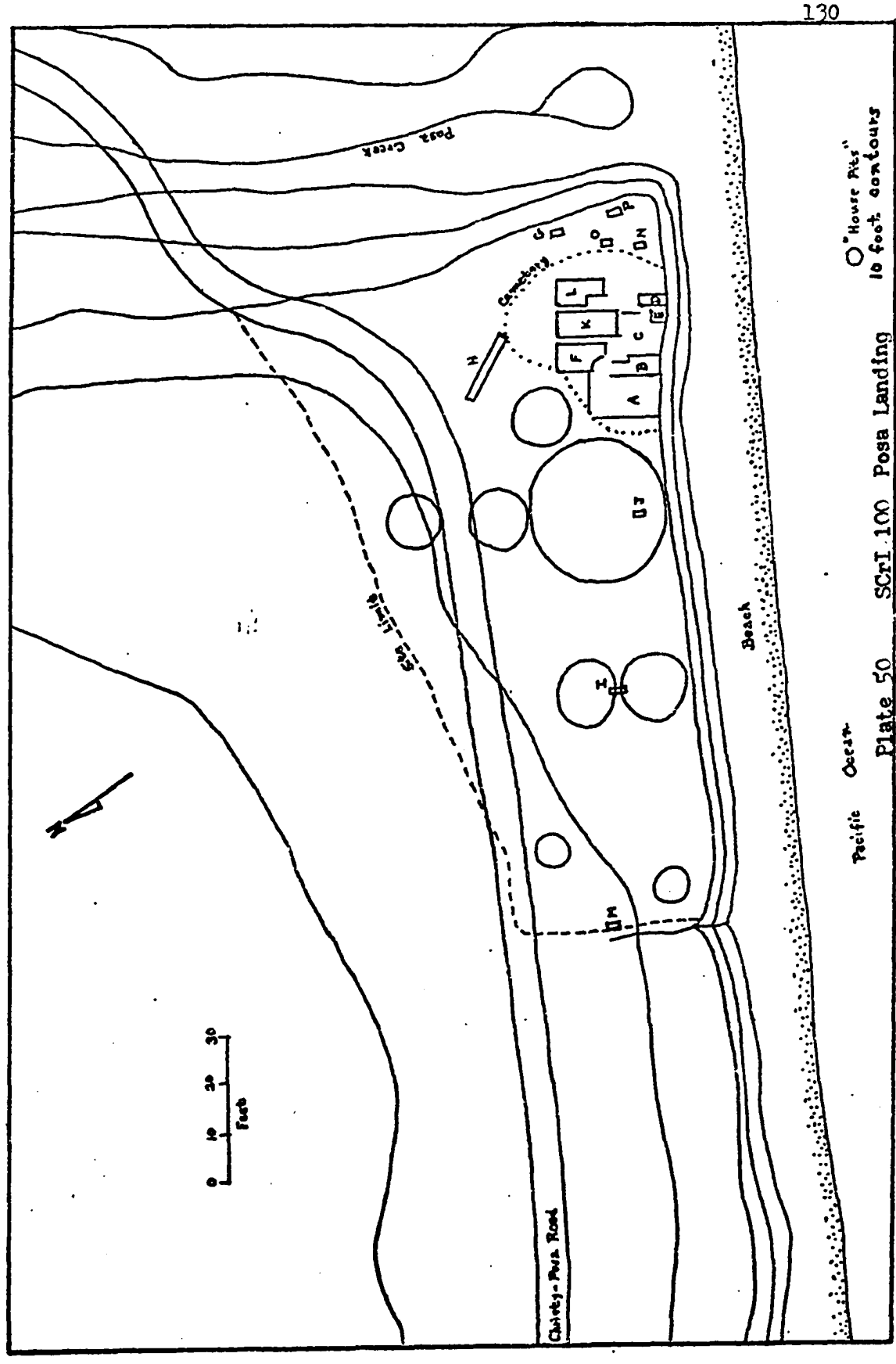

Plate 50 SCrI 100 Posa Landing

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SCrI-100, Posa Landing

Site 100 lies on a bluff overlooking the beach on a narrow coastal plain immediately west of the mouth of Posa Creek on the south coast of Santa Cruz Island. A jeep track leading from the creek westward passes through the northern part of the site. There are several circular depressions, the largest of them measuring about thirty feet in diameter. A cemetery at the southwestern corner of the site yielded the largest and most varied island assemblage to Olson's party in 1928. The entire area is marked by shell midden and covers about 8,400 square feet. Grass and iceplants (Mesembryanthemum crystallinum) form a low ground cover. Rogers (1929, 317) visited the site briefly in the 1920's.

Olson excavated sixteen pits, numbered A-P, of various sizes, most of them being in the cemetery area. A stratigraphic trench, Pit H, was dug in the midden area and measured 30 ft. long, 3 ft. wide, and 8.5 ft. deep. Test pits were dug in the circular depressions to the west of the cemetery and along the eastern margin of the site. Pit A-F, K, and L were placed in the cemetery area and, after expansion to follow out individual burials, they represented a nearly complete excavation of the cemetery.

Stratigraphy

Olson noted the stratigraphy of Pit H in his field notes. The cultural deposit, consisting of alternating layers of shell midden and ash, extended to a depth of 8 ft. The strata slopes slightly downward toward the south in the direction of the ocean bluff.

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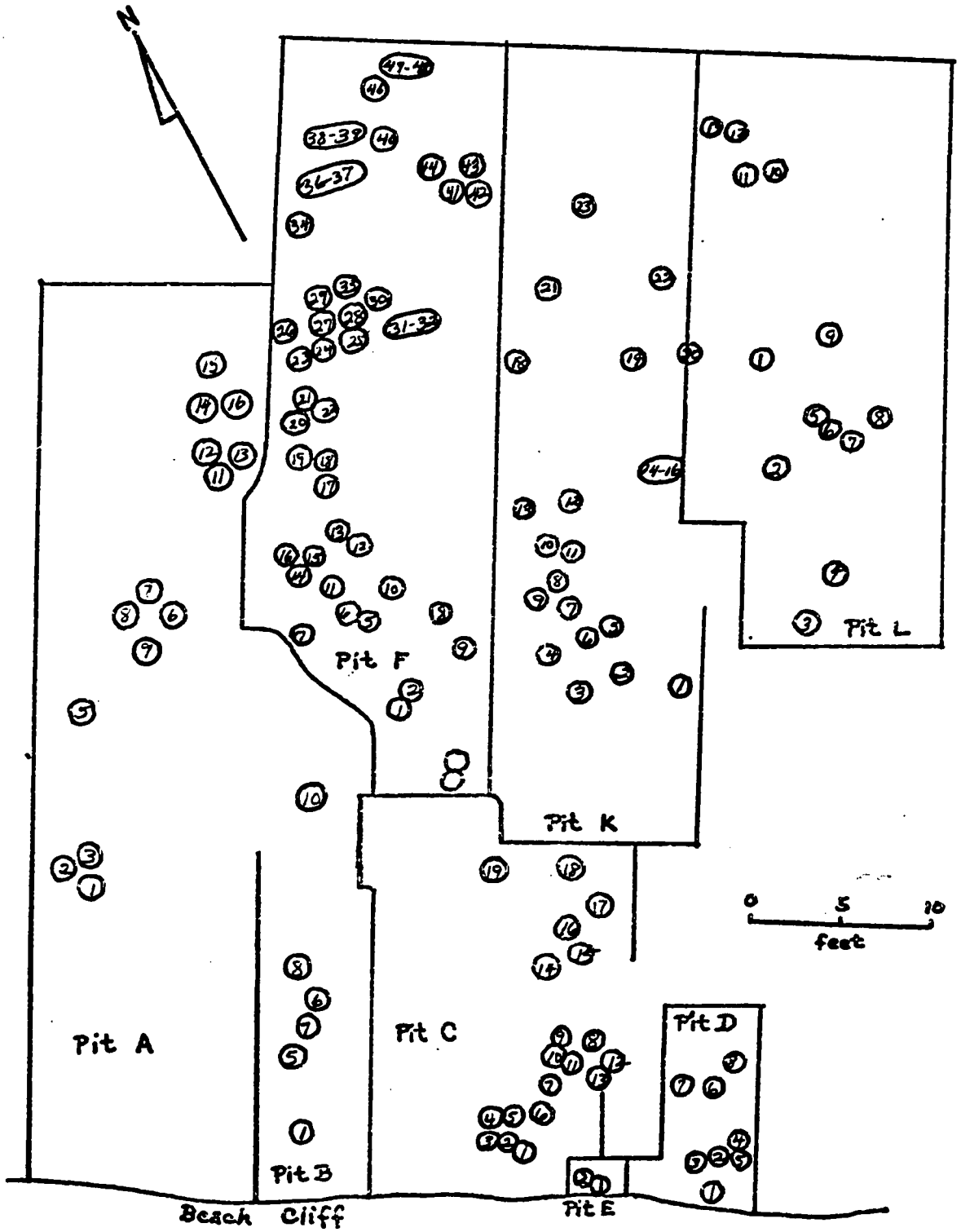
Plate 51 Cemetery Plan SCrI 100

graves denoted by circles



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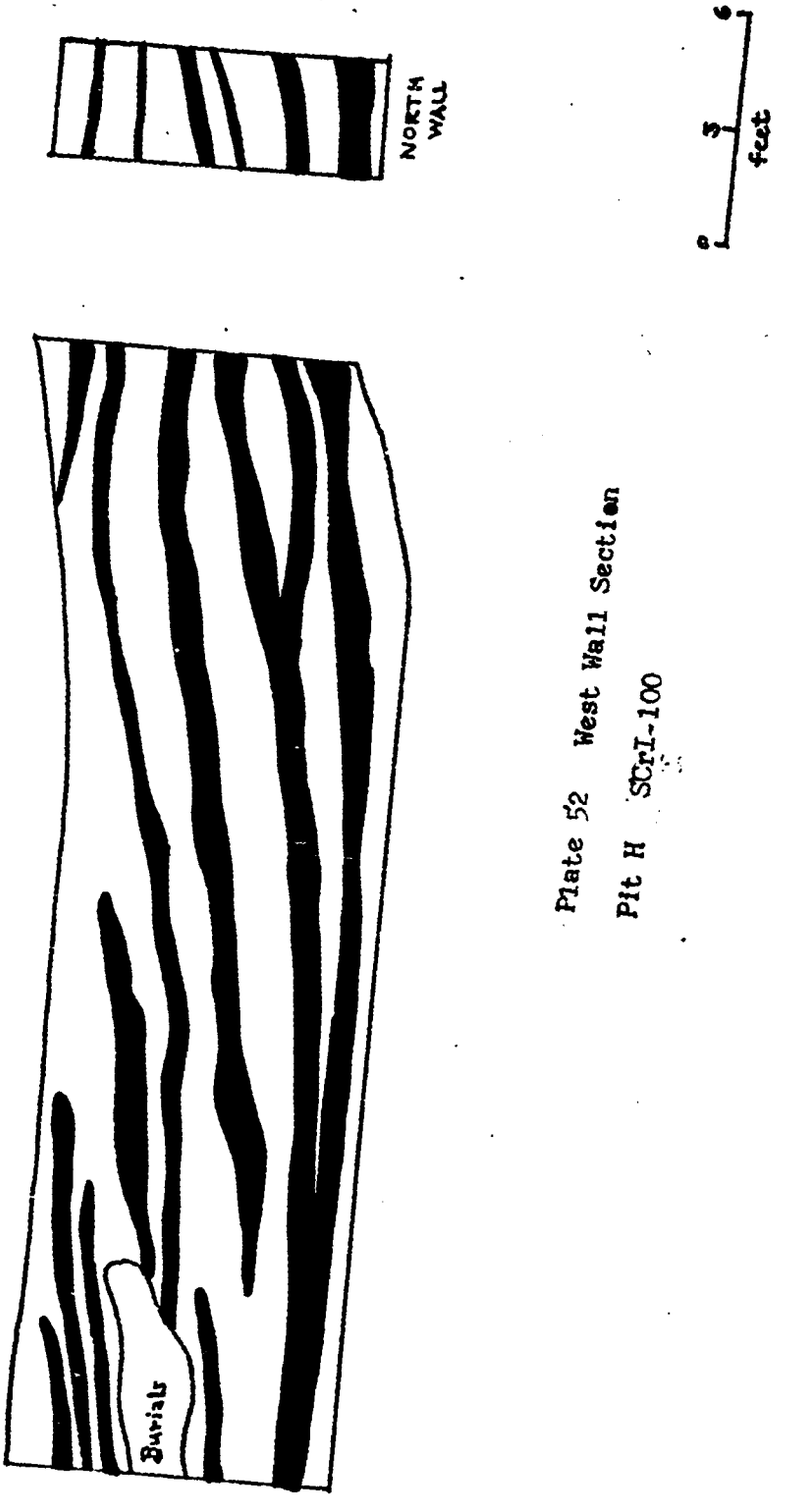

Plate 52 West Wall Section
Pit H 5CrI-100

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Burials were found from 2 to 4 ft. in depth in the southern 5 ft. of the trench.

Burials

A total of 180 burials were noted by excavators, but no data were kept on some of the more fragmentary specimens. Common mortuary features included flexure, northwesterly orientation, and mat shrouds of beach grass (Phyllospadix spp.)

Table 42
Burial Tabulations, Site 100

Burial No.	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
A-5	6	Fl	NW	RS	A	F	X	-
A-2	8	Fl	N	Pr	A	M	X	-
A-1	12	Fl	NW	RS	A	F	X	-
A-5a	12	Fl	NW	Pr	A		-	-
A-10	12	Fl	SW	RS	A	F	X	-
A-11	12	Fl	-	LS	A	M	X	-
A-12	12	Fl	-	LS	A	F	X	-
A-13	12	Fl	-	RS	I		X	-
B-4	12	-	-	-	-		X	-
A-3	14	Fl	N	Pr	A		-	-
A-9	14	Fl	N	Pr	A		X	-
B-5	14	-	NW	-	Y	F	X	-
B-6	14	Fl	NW	Pr	I		X	-
F-20	14	Fl	WNW	Pr	A	M	X	-
J-14	14	-	-	-	A		-	-
J-15	15	-	-	-	I		-	-
B-7	16	Fl	NNW	Pr	A	F	X	-
A-7	18	Fl	-	RS	A		-	-
A-14	18	Fl	NW	LS	A	M	-	-
A-15	18	Fl	NW	LS	A	M	-	-
A-5b	20	Fl	NNW	Pr	A	F	X	-
A-6	20	-	-	-	A	F	X	-
A-16	20	-	NW	RS	A		X	-
D-1	24	Fl	NNW	Pr	A		X	-
D-9	24	-	-	LS	A		X	-
D-10	24	-	-	-	A	F	-	-
F-1	24	-	-	-	A	F	-	-
F-19	24	Fl	NW	Pr	A		X	-
F-34	24	Fl	W	Pr	C		-	-
F-47	24	Fl	NW	-	I		-	-

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Table 42 (continued)

F-43	24	Fl	NW	RS	A	F	-	-
H-4	24	-	-	-	-		-	-
H-5	24	-	-	-	-		-	-
J-12	24	Fl	NW	LS	A	F	-	-
J-21	24	Fl	NW	LS	A	F	X	-
K-6	24	Fl	-	Pr	I		-	-
B-11a&b	26	Fl	N	LS	A&I	M	X	-
B-10	27	Fl	N	Pr	A	F	-	-
F-4	27	-	-	-	A	F	-	-
F-16	27	Fl	NNW	Pr	A		X	-
F-40	27	-	-	-	I		X	-
G-1	27	Fl	-	-	A		X	-
K-8	27	Fl	WNW	Pr	I		-	-
K-14	27	Fl	W	Pr	A	F	X	-
B-9	30	-	-	-	-		X	-
D-4	30	Fl	NW	Pr	A	M	X	-
D-5	30	Fl	E	Pr	C		X	-
F-17	30	-	-	-	I		X	-
F-18	30	-	-	LS	A		X	-
F-21	30	Fl	NW	Pr	A	F	X	-
F-22	30	Fl	N	Pr	A		X	-
F-26	30	Fl	NNW	Pr	A	M	X	-
F-49	30	-	NW	-	A		-	-
J-19	30	Fl	N	Pr	A	F	-	-
J-20	30	Fl	NW	LS	A	M	X	-
K-9	30	Fl	-	Pr	A		X	-
K-10	30	Fl	NW	Pr	A	F	X	X
K-12	30	Fl	W	RS	A		-	-
K-18	30	-	NW	-	I		-	X
K-19	30	Fl	SW	RS	A		-	-
K-20	30	-	N	LS	I		-	-
B-8	32	-	-	-	-	M	X	-
L-8	32	Fl	NW	Pr	A		-	-
B-1	34	Fl	NW	Pr	A	M	X	-
D-8	34	Fl	N	Pr	A	F	-	-
F-30	34	Fl	-	Su	I		X	X
F-35	34	-	-	-	-		X	-
K-15	34	Fl	W	RS	A		X	-
C-1	36	Fl	NW	Pr	C		X	-
C-2	36	Fl	NW	Pr	A	M	X	-
C-3	36	Fl	NW	Pr	A	F	X	X
C-7	36	Fl	NW	Pr	I		X	X
C-9	36	Fl	NW	RS	A	M	X	X
C-10	36	Fl	NW	Pr	A	M	-	-
D-2	36	Fl	NW	-	A	M	X	-
D-3	36	Fl	-	RS	C		X	X
D-11	36	Fl	-	Pr	A	F	X	-
F-6	36	-	-	-	A	F	-	-
F-23	36	Fl	NW	Pr	A		X	-
F-24	36	Fl	NW	Pr	I		X	X

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Table 42 (continued)

F-29	36	Fl	W	Pr	A	M	-	-
F-36	36	-	NW	-		M	-	-
F-37	36	Fl	NW	Pr	A	M	-	-
F-41	36	-	-	-	I		X	-
F-46	36	Fl	W	Pr	A		-	-
K-1	36	Fl	NW	Pr	A	F	-	-
K-2	36	Fl	N	Pr	A	F	-	-
K-7	36	Fl	-	Pr	I		X	-
K-16	36	Fl	WNW	Pr	A		-	-
K-22	36	Fl	SW	LS	I		X	-
L-3	36	Fl	NW	RS	A	F	X	-
L-9	36	-	N	LS	A		-	-
L-12	39	-	N	Pr	A	F	-	-
C-4	40	Fl	NW	Pr	A	F	X	-
C-11	40	Fl	NW	Pr	A	M	X	-
F-38	40	Fl	NW	Pr	A		-	-
J-x	40	-	-	-	-		-	-
A-14	42	Fl	NW	LS	A	M	-	-
B-3	42	-	-	-	A	F	-	-
C-14	42	-	NE	LS	C		X	X
C-18	42	Fl	N	Pr	A	M	X	-
C-19	42	Fl	NW	LS	A	F	X	-
D-14	42	-	-	-	A	F	X	-
D-15	42	-	-	-	A	F	X	-
F-27	42	-	-	-	I		X	X
F-28	42	-	-	-	I		X	-
F-33	42	-	-	-	I		X	-
F-39	42	-	-	-	A		-	-
H-1	42	Fl	NW	LS	A	F	-	-
J-3	42	Fl	NNW	Pr	A	M	X	-
J-9	42	-	-	Pr	A	F	-	-
J-10	42	-	-	LS	A	F	-	-
J-11	42	-	-	Pr	A	F	-	-
J-13	42	Fl	N	Pr	A	M	-	-
J-16	42	Fl	NW	RS	A	M	X	-
J-17	42	-	-	-	I		X	-
J-18	42	Fl	W	Pr	A	M	-	-
K-4	42	Fl	NW	Pr	A	M	X	-
K-13	42	Fl	NW	LS	A		X	-
K-21	42	Fl	N	Pr	I		X	X
L-1	42	Fl	N	LS	A	M	X	-
L-2	42	Fl	N	RS	A	M	-	-
L-4	42	-	-	RS	A	M	X	-
L-5	42	-	-	-	A	M	X	-
L-6	42	-	-	-	A		X	-
L-7	42	-	-	-	A	M	X	-
L-10	42	Fl	N	Pr	A	F	X	-
L-11	42	Fl	N	Pr	A	M	X	-

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Table 42 (continued)

C-15	44	-	-	-	A		-	-
K-11	44	Fl	N	Pr	I		X	X
C-16	46	Fl	N	RS	A	M	X	-
C-6	48	-	-	-	A	F	X	-
C-17	48	Fl	N	Pr	A	M	X	X
D-6	48	Fl	S	RS	I	M	X	-
F-7	48	-	-	-	A		-	-
F-10	48	-	-	-	-		-	-
F-15	48	Fl	N	Pr	A	F	X	-
F-31	48	Fl	NNW	Pr	A	F	X	-
F-32	48	Fl	NNW	Pr	I		X	X
H-2	48	Fl	NW	RS	A	F	-	-
F-14	48	-	-	-	-		-	-
L-14	48	Fl	W	Pr	A		-	-
D-13	51	Fl	-	Su	I		-	-
C-5	54	Fl	NNW	Pr	I		X	-
F-8	54	-	-	-	-		-	-
F-50	54	-	-	-	-		-	-
H-3	54	Fl	N	RS	A		-	-
L-13	54	Fl	WNW	LS	A		X	-
C-12	60	Fl	N	Pr	I	M	X	X
C-13	60	Fl	N	Pr	A	M	X	-
F-45	60	Fl	NW	Pr	A		-	X
D-16	66	Fl	NW	Pr	A	F	X	-
D-x	66	-	-	-	-		-	-
F-42	66	Fl	W	Pr	A		X	X
D-12	78	-	-	-	A	F	-	-

Animal Burials

Two animal burials were recovered from the site. A fully articulated dog skeleton, Burial C-8, was found at 18 in. on its side. Burial K-17 consisted of the articulated skeleton of a gull or raven and was recovered at 30 in. Heizer and Hewes (1940) described similar animal burials from Central California.

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Chipped Stone Artifacts

Projectile Points

Ninety projectile points of 10 types were recovered from between 6-96 in., consisting of 74 chert, 9 obsidian, 5 basalt, and 2 quartzite specimens.

Table 43
Projectile Point Tabulations, Site 100

Pit or Burial	Depth in.	Type 1b	1c	2a	2b	3	4b	5a	5b	5e	6b	Unique	fragment
H	6-12	-	-	-	1	-	-	-	-	-	-	-	-
B-4	12	-	-	-	-	-	-	-	-	1	-	-	-
H	12-18	-	-	-	1	-	1	-	-	-	-	-	2
H	18-24	-	1	-	-	-	1	-	-	-	-	-	1
D-1	24	-	-	-	-	-	-	-	-	-	-	-	2
D-9	24	-	-	-	1	-	-	-	-	-	-	-	-
F-4	27	-	-	-	-	-	-	-	-	-	1	-	-
B-11	30	-	-	-	-	-	-	-	-	-	-	-	1
D-5	30	-	-	-	-	-	-	-	1	-	-	-	-
H	30-36	-	-	-	-	-	-	-	-	-	-	-	4
C-1	36	-	-	-	-	-	-	-	-	-	-	-	1
C-2	36	-	-	-	-	-	-	4	-	-	-	-	-
D-2	36	-	-	-	-	-	-	1	-	-	-	-	1
D-11	36	-	1	-	1	-	-	-	-	-	-	1	1
K-7	36	1	-	-	-	-	-	-	-	-	-	1	-
H	36-42	-	-	-	-	-	-	-	-	-	-	-	1
J-16	42	-	-	-	-	3	5	-	-	-	-	-	1
K-13	42	-	-	1	1	-	-	1	-	-	-	-	-
L-10	42	-	-	-	-	-	-	-	-	-	4	-	2
L-11	42	-	-	-	-	-	-	-	-	-	4	-	-
C-15	44	1	-	-	-	-	-	1	-	-	-	-	-
K-11	44	-	-	-	-	-	-	-	-	-	-	-	1
F-10	46	-	-	-	-	-	-	-	-	1	-	-	-
H	48	-	-	-	-	-	1	-	-	-	-	-	-
H	54-60	1	1	-	-	-	-	-	-	1	-	-	-
C-13	60	-	-	-	-	-	-	7	-	-	-	-	-
H	60-66	-	-	1	1	-	1	-	-	-	-	-	1
D-x	66	-	-	-	2	-	2	-	-	-	-	-	1
H	66-72	1	-	-	-	-	-	-	-	-	-	1	-
D-12	78	1	-	-	-	-	-	-	-	-	-	-	-
H	90-96	-	-	-	-	-	-	-	-	-	-	-	1
J-5	no loc.	-	-	-	1	-	-	-	-	-	-	-	-
-	no loc.	1	-	-	-	1	-	-	-	2	-	-	2
Total		6	3	2	9	4	11	14	1	5	9	3	23

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Table 44
Distribution of Points by Material, Site 100

Pit or Burial	Depth in.	Material			
		Chert	Obsidian	Quartzite	Basalt
H	6-12	-	1	-	-
B-4	12	-	-	1	-
H	12-18	2	2	-	-
H	18-24	3	-	-	-
D-1	24	2	-	-	-
D-9	24	1	-	-	-
F-4	27	1	-	-	-
B-11	30	1	-	-	-
D-5	30	1	-	-	-
H	30-36	3	1	-	-
C-1	36	-	1	-	-
C-2	36	4	-	-	-
D-2	36	2	-	-	-
D-11	36	3	1	-	-
K-7	36	1	1	-	-
H	36-42	-	-	-	1
J-16	42	8	-	-	1
K-13	42	3	-	-	-
L-10	42	6	-	-	-
L-11	42	4	-	-	-
C-15	44	2	-	-	-
K-11	44	1	-	-	-
F-10	48	-	-	-	1
H	48	-	-	-	1
H	54-60	3	-	-	-
C-13	60	7	-	-	-
H	60-66	3	1	-	-
D-x	66	5	-	-	-
H	66-72	1	-	-	-
H	72-78	1	-	-	-
D-12	78	1	-	-	-
H	90-96	-	-	1	-
J-5	no loc.	1	-	-	-
-	no loc.	4	1	-	1
Total		74	9	2	5

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Table 45
Relation of Point Type to Material, Site 100

Material	Type											
	1b	1c	2a	2b	3	4b	5a	5b	5e	6b	Unique	Fragment
chert	6	3	2	7	4	8	14	1	2	9	2	16
obsidian	-	-	-	2	-	1	-	-	1	-	1	4
basalt	-	-	-	-	-	2	-	-	1	-	-	3
quartzite	-	-	-	-	-	-	-	-	1	-	-	1
Total	6	3	2	9	4	11	14	1	5	9	3	24

Drills

The University party recovered 704 drills of four types from the site, all of them made of chert. The association of Type 1 drills with caches of whale shells probably indicated that they were used for perforating blade blanks.

Table 46
Drill Distribution, Site 100

Pit or Burial	Depth in.	Type 1	2	3	4	Bead Cache
H	0-6	5	-	-	1	-
H	6-12	5	-	-	1	-
A-10	12	-	1	-	-	-
A-13	12	20	-	-	2	-
B-4	12	-	-	-	2	-
H	12-18	-	-	-	6	-
F-20	14	-	1	-	-	-
B-7	16	-	1	-	-	-
H	18-24	6	-	2	-	-
D-1	24	-	-	-	1	-
H	24-30	2	-	-	7	-
F-16	27	37	-	-	-	-
B-9	30	3	-	-	-	-
F-21	30	13	-	-	-	-
F-22	30	4	-	-	-	-
H	30-36	-	-	-	8	-
C-3	36	-	-	-	2	-
C-7	36	-	1	-	-	-
F-41	36	4	-	-	-	-
H	36	114	-	-	-	-
K-7	36	-	-	-	1	-
K-22	36	-	-	-	1	-

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Table 46 (continued)

H	36-42	-	-	-	1	-
C-4	40	-	-	1	-	-
J-16	42	117	-	-	-	-
J-17	42	11	-	-	-	X
K-13	42	201	1	-	-	-
L-4	42	-	1	4	-	-
H	42-48	-	-	-	3	-
K-11	44	44	-	-	-	-
C-17	48	-	1	-	-	-
F-7	48	30	-	-	-	X
F-10	48	10	-	-	1	-
F-32	48	1	-	-	-	-
H	48	2	-	-	-	X
A	48-54	-	1	-	-	-
C-5	54	-	-	-	3	-
L-13	54	-	1	-	-	-
H	54-60	2	-	-	-	-
J-1	no loc.	-	1	-	-	-
J-5	no loc.	1	-	-	-	-
F-11	no loc.	1	-	-	-	-
-	no loc.	10	-	-	4	-
Total		643	10	7	44	

Scrapers

Olson recovered 18 scrapers from the site. All specimens were made of chert with the exception of 2 flake scrapers and 1 core scraper of quartzite.

Table 47
Scraper Distribution, Site 100

Pit or Burial	Depth in.	Core	Flake
H	6-12	1	-
H	12-18	-	1
H	24-30	-	1
H	30-36	-	1
H	36-42	-	4
C-11	40	-	1
H	42-48	1	-
F-7	48	-	3
H	48	1	-
H	66-72	-	1
H	72-84	1	1
-	no loc.	-	1
Total		4	14

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Ground Stone Artifacts

Steatite Beads and Tubes

A total of 134 steatite beads of 10 types were recovered from the site from 6-78 in.

Table 48
Steatite Bead Distribution, Site 100

Pit or Burial	Depth in.	Type 1b	1c	1d	4	5	6a	6b	7	9	10
A-5	6	-	1	-	-	-	-	-	-	-	-
A-6	20	-	-	-	-	1	-	-	-	-	-
F-4	27	-	-	-	-	2	-	-	-	-	-
F-16	27	-	-	-	-	1	-	-	-	-	-
F-40	27	-	-	-	-	1	-	-	5	-	-
D-4	30	-	2	-	-	-	-	-	-	-	-
F-18	30	-	1	-	-	3	-	-	3	-	-
F-21	30	-	-	-	-	-	-	-	1	-	-
C-1	36	1	-	-	-	-	-	-	-	-	-
C-7	36	-	-	-	-	-	1	-	-	-	-
D-2	36	-	2	-	-	-	4	-	-	-	-
D-3	36	-	2	-	49	-	-	-	-	-	-
F-41	36	-	-	-	-	6	-	-	1	-	-
K-22	36	-	-	-	-	1	-	2	-	-	-
L-3	36	-	3	-	-	-	-	-	-	-	-
H	36-42	-	-	-	-	-	-	-	-	1	-
K-21	42	-	1	-	1	-	-	-	-	-	-
L-4	42	-	-	-	-	-	-	-	-	1	-
L-10	42	-	-	-	-	1	-	-	3	-	-
C-15	44	1	3	-	-	-	-	-	-	-	-
D-6	48	-	-	-	-	-	2	-	-	-	-
F-10	48	-	-	1	-	3	3	-	3	-	-
C-5	54	-	3	-	-	-	-	-	-	-	-
D-16	66	1	5	-	-	-	-	-	-	-	-
D-12	78	-	-	-	1	-	2	-	-	-	-
F-13	no loc.	-	-	-	1	1	-	-	-	-	4
Total		3	23	1	51	20	12	2	16	2	4

Steatite Ornaments

Thirteen steatite ornaments of four types were recovered between 24-78 in. Three other pendants of indeterminate metamorphic stone were found singly with Burial D-13, 42 in., Burial D-16, 66 in., and in Pit H, 30-36 in.

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Table 49
Steatite Ornament Distribution, Site 100

Pit or Burial	Depth in.	Type 1	2a	3	4	Unique	Indeterminate
F-1	24	-	-	-	-	1	-
F-4	27	-	-	1	-	-	-
F-40	27	-	-	-	-	-	1
D-2	36	-	-	-	-	1	-
L-3	36	-	-	-	1	-	-
L-4	42	-	1	-	-	-	-
K-11	44	1	-	-	-	-	-
C-17	48	-	1	-	-	-	-
D-6	48	-	-	-	-	1	-
D-16	66	-	1	-	-	-	-
H	60-66	-	-	-	1	-	-
D-12	78	2	-	-	-	-	-
Total		3	3	1	2	3	1

Miscellaneous Steatite Objects

This category includes 4 pipes, 2 bowls, a canoe effigy, and 12 cylindrical objects whose use is indeterminate.

Table 50
Steatite Object Distribution, Site 100

Burial No.	Depth in.	Pipe Types 1	2	3	Bowl	Effigy	Cylinders
B-6	14	-	-	-	-	-	11
F-20	14	-	1	-	-	-	-
B-1	34	1	-	-	-	-	-
C-17	48	-	-	-	-	-	1
D-16	66	-	-	-	1	1	-
D-12	78	-	-	1	-	-	-
F-5	no loc.	-	-	-	1	-	-
-	no loc.	-	1	-	-	-	-
Total		1	2	1	2	1	12

Mortars

Olson recovered 19 mortars from the site between 12-102 in., mostly made of sandstone.

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Table 51
Mortar Distribution, Site 100

Pit or Burial	Depth in.	Type 1a	3a	7a	8a	Fragment
A-1	12	-	1	-	-	-
D-6	30	1	-	-	-	-
H	36	-	-	1	-	-
H	48-54	-	-	-	1	-
H	54-60	-	-	-	-	2
H	66-72	-	-	-	2	-
H	72-78	-	-	-	-	1
H	78-84	-	-	-	-	1
H	84-90	-	-	-	-	1
H	96-102	-	-	1	-	-
J-1	no loc.	-	-	1	-	3
-	no loc.	-	-	-	2	1
Total		1	1	3	5	9

Pestles

A total of 20 pestles was recovered from the site from the surface to a depth of 72 in.

Table 52
Pestle Distribution, Site 100

Pit or Burial	Depth in.	Type 1a	2	6b	Fragment
surface	-	-	1	-	-
B-9	30	-	1	-	-
H	30-36	-	1	-	-
J-x	40	1	-	-	-
H	48-56	-	1	-	-
F-50	54	-	1	-	-
H	54-60	-	1	-	-
H	60-66	-	1	-	-
D-16	66	-	1	-	-
H	66-72	-	1	-	-
J-1	no loc.	-	4	-	2
L-x	no loc.	-	1	-	-
-	no loc.	-	1	1	1
Total		1	15	1	3

Doughnut Stones

A total of 28 doughnut stones was recovered between 6-90 in. and consisted of 16 sandstone, 7 nephrite, 3 lava, and 2 granite speci-

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mens.

Table 53
Doughnut Stone Distribution, Site 100

Pit or Burial	Depth in.	No. of specimens
A-5	6	1
B-6	14	1
E-7	14	2
A-7	18	2
F-16	27	1
B-1	34	1
J-x	40	1
J-17	42	1
L-4	42	1
C-13	60	1
H	66-72	1
D-12	78	2
H	84-90	1
J-1	no loc.	6
-	no loc.	6

Miscellaneous Ground Stone Artifacts

This category includes 7 hammerstones (HS), 5 abrading stones (AS), 14 grinding slabs (GS), 264 asphalted boiling pebbles (AP), 62 colored beach pebbles (CP), 35 ocher lumps (OL), and 12 indeterminate specimens.

Table 54
Miscellaneous Stone Artifacts, Site 100

Pit or Burial	Depth in.	HS	AS	GS	AP	CP	OL	Indeterminate
H	0-6	-	-	-	6	2	1	-
A-5	6	-	1	-	-	-	-	-
H	6-12	-	-	-	-	10	-	-
A-10	12	1	-	1	-	-	-	-
H	12-18	-	-	-	8	-	-	1
F-20	14	-	-	-	-	-	1	-
H	18-24	-	1	-	4	3	3	-
D-9	24	1	-	-	-	-	-	-
H-4	24	-	-	-	6	-	-	-
H	24-30	1	-	-	12	-	1	1
F-16	27	-	-	-	-	-	1	-

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Table 54 (continued)

B-9	30	-	-	-	-	1	1	-
D-4	30	-	-	-	-	3	-	-
K-18	30	-	-	-	-	-	2	-
H	30-36	-	-	-	6	6	1	-
B-1	34	-	-	-	-	-	-	1
C-3	36	-	-	-	-	3	2	-
C-7	36	-	-	-	-	1	2	-
K-7	36	-	-	-	-	-	2	2
H	36-42	-	-	-	13	-	1	1
C-4	40	-	-	-	-	-	1	-
C-11	40	-	-	-	-	1	-	-
B-3	42	-	-	1	-	-	-	-
K-21	42	-	1	-	-	-	1	-
L-10	42	-	-	-	-	1	-	-
L-11	42	-	-	-	-	-	2	-
H	42-48	-	-	-	13	7	-	-
D-6	48	-	-	1	-	-	-	-
F-7	48	-	-	-	-	-	5	-
F-31	48	-	-	-	-	-	2	-
F-32	48	-	-	-	-	-	-	1
H	48-54	-	-	-	26	8	1	-
H	54-60	-	-	1	22	10	-	-
H	60-66	-	-	-	67	-	-	-
F-42	66	-	-	-	-	-	1	-
H	66-72	1	-	1	-	-	1	-
H	72-78	1	1	1	50	-	-	-
D-12	78	-	1	-	-	-	-	-
H	78-84	-	-	1	27	-	-	-
H	84-90	-	-	-	4	6	-	-
H	90-96	-	-	1	-	-	1	-
H	96-102	-	-	-	-	-	1	-
F-5	no loc.	-	-	-	-	-	-	1
J-1	no loc.	-	-	5	-	-	-	2
L-x	no loc.	1	-	-	-	-	-	-
-	no loc.	1	-	1	-	-	1	2
Total		7	5	14	264	62	35	12

Shell Artifacts

Shell Beads

A total of 15,578 shell beads of 47 types was recovered from the site and is summarized in Table 55.

Shell Ornaments

A total of 440 *Haliotis* ornaments of 93 types was recovered from the site and is summarized in Table 56.

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Table 55
Shell Bead Distribution, Site 100

Burial No.	Depth in.	Type 1a	1b	1c	1f	1j	1k	2a	2c	3b	3c	3f	3g	3h	3i	5a	5d	5e	6a	7a	7b
A-13	12	-	-	-	-	-	-	-	-	-	-	-	51	-	-	2	-	-	-	2	-
B-4	12	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-
A-9	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-6	14	-	-	-	-	-	-	-	-	-	-	512	-	-	-	-	-	-	-	-	-
B-7	16	-	-	-	1	-	-	-	-	-	1567	-	-	-	-	-	-	-	-	-	-
A-6	20	-	-	-	-	-	-	-	-	-	-	-	5	-	1	-	-	-	-	-	-
D-9	24	-	-	-	-	-	-	-	-	-	-	1	65	-	-	-	-	-	-	-	-
F-1	24	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-11	26	-	-	-	-	161	-	-	-	-	-	506	-	-	-	1	-	-	-	-	-
F-4	27	-	-	-	-	-	-	-	-	-	-	2	-	-	2	4	2	-	-	12	-
F-16	27	-	-	-	-	-	-	-	-	1	1	85	120	-	-	-	-	-	-	-	-
F-40	27	-	-	-	-	-	-	-	-	-	-	121	252	-	-	-	-	-	-	13	-
B-9	30	-	-	-	-	-	-	155	-	-	36	-	-	-	19	-	-	-	-	-	-
D-4	30	-	-	-	-	400	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-
F-18	30	-	-	-	-	1	-	-	-	-	-	813	586	-	-	2	-	-	-	-	-
F-21	30	-	-	-	-	-	-	-	-	-	-	500	221	-	-	-	-	-	-	-	-
F-22	30	-	-	-	-	-	-	-	-	-	-	1	12	-	2	1	-	-	-	2	-
K-9	30	-	-	-	-	-	-	-	-	-	1	500	-	-	316	-	-	-	-	-	-
B-8	32	-	-	-	-	-	-	500	-	-	11	9	-	-	-	-	-	-	-	-	-
B-1	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-30	34	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	1	-
C-3	36	-	-	-	-	-	-	-	-	-	3	-	2	-	-	-	-	-	-	-	-
C-7	36	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-
F-41	36	-	-	-	-	1	-	-	-	-	-	103	500	-	-	4	-	-	-	24	-
K-2	36	-	-	-	-	500	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-

Table 55 (continued)

Burial No.	Depth in.	Type 8	9a	9b	10a	11a	11b	13b	14	15a	15b	16a	17a	17c	18b	19a	21a	21b	23a	23b	24a	24b	25a
A-13	12	-	-	-	8	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
B-4	12	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-
A-9	14	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-6	14	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
B-7	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	406	-	-	-	-	-	-	-
A-6	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-9	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
F-1	24	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-11	26	-	-	-	-	-	-	-	15	1	-	-	-	-	-	43	-	-	-	-	-	-	-
F-4	27	-	-	-	7	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
F-16	27	5	-	-	8	38	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
F-40	27	-	-	-	2	8	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-
B-9	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-4	30	-	-	-	-	-	-	-	-	29	-	-	-	-	-	-	-	-	227	-	-	-	-
F-18	30	-	-	-	4	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-
F-21	30	-	-	-	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-22	30	2	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K-9	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
B-8	32	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-1	34	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-30	34	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-3	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-7	36	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
F-41	36	1	-	-	64	1	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
K-2	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table 55 (continued)

Burial No.	Depth in.	Type 1a	1b	1c	1f	1j	1k	2a	2c	3b	3c	3f	3g	3h	3i	5a	5d	5e	6a	7a	7b
K-7	36	-	-	7	-	-	-	-	-	-	-	42	16	-	-	-	8	-	-	-	-
K-22	36	-	-	-	1	-	3	-	-	-	-	295	528	-	16	4	-	-	-	-	-
L-3	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-14	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-27	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
F-33	42	-	-	-	-	1	-	-	-	-	-	1	500	-	-	-	-	-	-	6	3
J-16	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-
J-17	42	-	-	-	38	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K-13	42	-	-	-	-	-	-	-	-	-	1	500	-	-	1	-	-	-	-	-	-
K-21	42	-	-	-	-	-	-	-	-	-	-	500	-	-	-	-	-	-	-	-	-
L-4	42	-	-	-	-	-	-	-	-	-	1	2	-	-	-	19	-	-	-	-	-
L-7	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L-11	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K-11	44	-	-	-	-	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-
C-17	48	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
D-6	48	1	-	-	-	318	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
F-7	48	-	-	-	10	-	-	-	-	500	11	10	519	-	14	-	-	1	-	2	-
F-10	48	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	6	-
F-15	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-31	48	-	-	-	1	-	-	-	-	-	-	20	505	-	6	36	4	-	-	32	2
F-32	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-	6	-
C-5	54	-	-	-	-	-	-	-	-	-	430	-	-	-	-	-	-	-	-	-	-
F-8	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-16	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-12	78	-	-	-	-	12	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-
Total		1	1	7	51	1417	3	657	1	501	2079	4568	3892	2	377	77	15	1	1	112	5

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Table 55 (continued)

Burial No.	Depth in.	8	9a	9b	10a	11a	11b	13b	14	15a	15b	16a	17a	17c	18b	19a	21a	21b	23a	23b	24a	24b	25a
K-7	36	-	-	-	-	-	-	-	-	8	-	-	-	-	-	10	-	-	-	-	-	3	-
K-22	36	-	-	-	52	-	-	-	-	-	-	-	-	-	-	53	-	-	-	-	-	1	-
L-3	36	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
C-14	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	-	-	-	-
F-27	42	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
F-33	42	2	-	-	1	-	44	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-
J-16	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J-17	42	-	-	1	12	-	-	-	-	-	-	-	-	-	40	3	-	-	6	-	-	-	-
K-13	42	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
K-21	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L-4	42	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-
L-7	42	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
L-11	42	-	-	-	-	-	-	-	17	-	-	-	1	-	-	-	-	-	-	-	-	-	3
K-11	44	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
C-17	48	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
D-6	48	-	-	-	-	-	-	-	-	25	-	-	-	-	-	-	-	-	184	-	-	-	-
F-7	48	-	-	-	-	9	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	-	-
F-10	48	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
F-15	48	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-31	48	2	2	-	17	21	-	-	-	2	-	-	-	-	-	15	-	-	-	-	-	-	-
F-32	48	-	-	-	-	2	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-
C-5	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-8	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
D-16	66	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
D-12	78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	5	-	-
Total		12	2	1	177	108	46	3	47	86	12	3	1	1	40	553	1	2	671	5	5	7	3

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Table 55 (continued)

Burial No.	Depth in.	Type 26b	28	29	35	36
A-13	12	-	-	-	-	-
B-4	12	-	-	-	-	-
A-9	14	-	-	-	-	-
B-6	14	-	-	-	-	-
B-7	16	-	-	-	-	-
A-6	20	-	-	-	-	-
D-9	24	-	-	-	-	-
F-1	24	-	-	-	-	-
B-11	26	-	-	-	-	-
F-4	27	-	-	-	-	-
F-16	27	-	-	-	-	-
F-40	27	-	-	-	-	-
B-9	30	-	-	-	-	-
D-4	30	4	-	-	6	-
F-18	30	-	-	-	-	-
F-21	30	-	-	-	-	-
F-22	30	-	-	-	-	-
K-9	30	-	-	-	-	-
B-8	32	-	-	-	-	-
B-1	34	-	-	-	-	-
F-30	34	-	-	-	-	-
C-3	36	-	-	-	-	-
C-7	36	-	-	-	-	-
F-41	36	-	-	-	-	-
K-2	36	-	-	-	-	-
K-7	36	-	-	7	-	-
K-22	36	-	-	-	-	-
L-3	36	-	-	-	-	-
C-14	42	-	-	-	-	-
F-27	42	-	-	-	-	-
F-33	42	-	-	-	-	-
J-16	42	-	-	-	-	-
J-17	42	-	-	-	-	-
K-13	42	-	-	1	-	-
K-21	42	-	-	-	-	-
L-4	42	-	-	-	-	-
L-7	42	-	-	-	-	-
L-11	42	-	-	-	-	-
K-11	44	-	-	-	-	-
C-17	48	-	-	-	-	-
D-6	48	1	1	-	2	-
F-7	48	-	-	-	-	-
F-10	48	-	-	-	-	-
F-15	48	-	-	-	-	-
F-31	48	-	-	-	-	-
F-32	48	-	-	-	-	-
C-5	54	-	-	-	-	-
F-8	54	-	-	-	-	-
D-16	66	-	-	-	-	-
D-12	78	-	-	-	1	1
Total		5	1	8	9	1

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Table 56

Haliotis Ornament Distribution, Site 100

Burial No.	Depth in.	Type B4	B4aa	Ca	Caaf	Cb	C1	C1b	C2	C2bb	C4aa	C5	C5g	C5i	C6	C6bb	C7a	C7aa	C8	D6	D6a	D6d	D8d	E	Ea	E1
A-13	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
B-4	12	-	-	-	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
F-20	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
B-7	16	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-9	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
F-1	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
F-4	27	-	-	-	-	-	1	-	-	-	1	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-
F-16	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	2
B-9	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
F-18	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-21	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
F-22	30	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
F-30	34	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-1	36	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-2	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-7	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-24	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2
F-41	36	-	-	-	-	-	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K-7	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
K-22	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-11	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-27	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
F-33	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
J-16	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-
J-17	42	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	2	1	2	-	4
K-21	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
L-4	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
L-7	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	-	-	-	-	1
L-11	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
C-15	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K-11	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-

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Table 56 (continued)

Burial No.	Depth in.	Type E1a	E1g	E2aa	E3	E4	E4a	E5	E9	E9a	E9aa	E10	E10a	E10aa	E12	E12aa	E15	F1	F1a	F1g	F6	G	G2	G2a
A-13	12	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
B-4	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-20	14	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-7	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-9	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-1	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-4	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	
F-16	27	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-9	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-18	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-21	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-22	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	
F-30	34	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	
C-1	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-2	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-7	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-24	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-41	36	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	1	3	-
K-7	36	1	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-
K-22	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-11	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-27	42	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
F-33	42	2	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	1	-
J-16	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J-17	42	1	-	-	-	2	-	-	1	1	-	1	-	-	-	-	-	-	-	-	-	1	1	2
K-21	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L-4	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L-7	42	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
L-11	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-15	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K-11	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	1	-	-	-	-

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Table 56 (continued)

Burial No.	Depth in.	Type G2aa	G2b	G2bb	G6a	G6aa	G8a	G8aa	I	I1	I1g	I3	I4	I4a	I5	I7	I7aa	I8a	I9	I11g	I11aa	J1	J1a	J1aa
A-13	12	-	-	1	-	1	-	-	-	3	-	-	4	1	-	-	-	-	1	-	-	2	-	-
B-4	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-20	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-7	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-9	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-1	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-4	27	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-
F-16	27	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-9	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-18	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-21	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-22	30	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-30	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-1	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-2	36	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
C-7	36	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-24	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
F-41	36	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-
K-7	36	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	1	-	-	-	-
K-22	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-11	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-27	42	-	-	-	-	-	-	-	3	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
F-33	42	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J-16	42	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J-17	42	-	1	3	1	-	1	-	-	13	-	-	3	-	-	1	-	-	3	-	-	3	-	-
K-21	42	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L-4	42	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L-7	42	-	-	-	1	-	1	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-
L-11	42	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-15	44	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K-11	44	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 56 (continued)

Burial No.	Depth in.	Type J4	M1	N1	N4	N6	N6aa	O	O1	O2	O4	O4aa	O5	O5i	O7	O7aa	O8a	O8aa	O11	O11aa	O12aa	O14	P	fragments
A-13	12	-	-	4	-	1	-	-	1	-	4	1	-	-	-	-	1	-	-	-	-	-	1	2
B-4	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-20	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-7	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-9	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-1	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-4	27	-	-	1	2	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
F-16	27	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2
B-9	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-18	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
F-21	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
F-22	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-30	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-
C-1	36	-	-	-	-	-	-	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-
C-2	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-7	36	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
F-24	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-41	36	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K-7	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
K-22	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
C-11	40	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
F-27	42	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
F-33	42	-	-	2	-	-	-	-	-	-	1	-	-	-	-	3	-	-	-	-	1	-	1	-
J-16	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
J-17	42	1	1	1	2	-	-	-	2	-	2	-	-	-	-	-	-	-	1	-	-	-	2	14
K-21	42	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
L-4	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
L-7	42	-	-	-	1	-	-	-	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	-
L-11	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-15	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
K-11	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6

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Table 56 (continued)

Burial No.	Depth in.	Type B4	B4aa	Ca	Caaf	Cb	C1	C1b	C2	C2bb	C4aa	C5	C5g	C5i	C6	C6bb	C7a	C7aa	C8	D6	D6a	D6d	D8d	E	Ea	E1
C-17	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
D-6	48	-	-	-	-	-	1	-	-	-	-	3	2	1	-	-	-	-	-	-	-	-	-	3	2	1
F-7	48	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
F-10	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-31	48	1	-	-	-	-	-	-	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
F-32	48	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
D-16	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-
D-12	78	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Total		2	1	1	1	1	4	1	3	3	2	5	2	1	1	1	1	1	1	4	4	2	1	22	5	33

Burial No.	Depth in.	E1a	E1g	E2aa	E3	E4	E4a	E5	E9	E9a	E9aa	E10	E10a	E10aa	E12	E12aa	E15	F1	F1a	F1g	F6	G	G2	G2a
C-17	48	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
D-6	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-7	48	1	-	-	-	1	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	4	-
F-10	48	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-31	48	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-
F-32	48	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
D-16	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-12	78	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-
Total		6	3	1	2	12	1	1	2	1	1	3	2	3	1	1	1	4	2	2	1	3	21	4

Table 56 (continued)

Burial No.	Depth in.	Type G2aa	G2b	G2bb	G6a	G6aa	G8a	G8aa	I	I1	I1g	I3	I4	I4a	I5	I7	I7aa	I8a	I9	I11g	I11aa	J1	J1a	J1aa
C-17	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-6	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-7	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
F-10	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-31	48	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
F-32	48	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-16	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-12	78	-	-	-	-	-	-	-	5	3	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Total		10	1	4	2	1	2	1	12	40	2	1	8	1	2	1	1	2	6	1	1	11	1	1

Burial No.	Depth in.	J4	N1	N1	N4	N6	N6aa	O	O1	O2	O4	O4aa	O5	O5i	O7	O7aa	O8a	O8aa	O11	O11aa	O12aa	O14	P	fragments
C-17	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-6	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-7	48	-	-	1	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	1	-	-	2	-
F-10	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F-31	48	2	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	1	3
F-32	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-16	66	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
D-12	78	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Total		3	1	11	5	2	1	3	5	1	14	1	3	2	3	4	1	1	1	2	1	1	8	73

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Shell Fishhooks

A total of 152 shell fishhooks and fishhook fragments was recovered, 7 of which were made of Haliotis shell and 145 of Mytilus shell.

Table 57
Shell Fishhook Distribution, Site 100

Pit or Burial	Depth in.	Mytilus Type 1	2	3	Fragments	Haliotis Type 1	2	Fragments
H	12-18	1	42	-	62	-	1	-
B-5	14	1	-	-	-	-	-	-
A-6	20	-	1	-	-	-	-	-
D-8	24	-	-	-	1	-	-	-
F-1	24	-	1	-	-	-	-	-
H	24-30	-	-	1	-	-	-	-
K-14	27	1	-	-	-	-	-	-
H	30-36	4	-	-	1	-	-	-
F-6	36	-	1	-	-	-	-	-
F-41	36	-	-	-	1	-	-	-
K-22	36	-	1	-	-	-	-	-
H	36-42	2	1	-	4	-	-	-
J-16	40	-	1	-	-	-	-	-
L-4	42	-	-	-	1	-	-	-
H	42-48	1	-	-	1	-	-	-
K-11	44	-	1	-	-	-	-	-
C-17	48	-	-	-	-	-	1	1
H	48-54	-	-	-	3	-	-	-
H	54	1	-	-	-	-	-	-
H	54-60	4	-	-	-	3	1	-
H	60-66	-	1	-	1	-	-	-
H	84-90	-	-	-	1	-	-	-
-	no loc.	1	-	-	2	-	-	-
Total		16	50	1	78	3	3	1

Haliotis Shell Containers

Fifty whole Haliotis shells of five species were recovered from the site, many of them having siphonal holes plugged with asphaltum, indicating use as a container.

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Table 58
Haliotis Shell Containers, Site 100

Pit or Burial	Depth in.	Species cracherodii	rufescens	fulgens	assimilis	corrugata
A-2	8	-	1	-	-	-
H	12	-	1	-	-	-
B-5	14	-	1	-	-	-
B-7	14	4	-	-	-	1
F-20	14	1	-	-	-	-
A-6	18	-	1	-	-	-
A-7	18	1	1	-	-	-
A-15	18	-	1	-	-	-
F-16	27	1	-	-	-	-
B-9	30	2	-	-	-	-
B-11	30	1	-	-	-	-
F-18	30	1	-	-	-	-
C-1	36	1	-	-	1	-
C-2	36	2	-	1	-	-
C-11	40	2	-	-	-	-
C-14	40	2	-	-	-	-
F-27	40	1	-	-	-	-
J-17	40	1	-	-	-	-
L-4	40	-	-	1	-	-
H	40-48	-	-	1	-	-
C-17	48	3	-	3	-	-
F-13	48	-	1	-	-	-
H	48-54	-	-	1	-	-
F-8	54	-	1	-	-	-
H	60-66	1	-	-	-	-
H	72-78	1	-	1	-	-
H	84-90	1	-	-	-	-
H	90-96	-	3	-	-	-
H	96-102	-	1	-	-	-
E-2 no loc.		1	-	-	-	-
E-2 no loc.		1	-	-	-	-
Total		28	12	8	1	1

Miscellaneous Modified Shell

Fifty-five miscellaneous specimens of modified shell were recovered from the site.

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Table 59
Miscellaneous Shell Distribution, Site 100

Pit or Burial	Depth in.	Haliotis	Mytilus	Tivela	Limpet	Pecten	Cypraea
A-13	12	8	-	-	-	-	-
H	12-18	-	-	1	-	-	-
F-16	27	-	1	-	-	-	-
B-9	30	-	-	-	1	-	-
F-18	30	-	2	-	-	-	-
B-8	32	-	-	-	1	-	-
F-41	36	4	-	-	-	-	-
K-7	36	-	-	1	-	-	-
H	36-42	1	-	-	2	-	-
C-4	40	-	-	1	-	-	-
J-17	42	-	-	-	9	-	3
L-1	42	-	-	-	1	-	-
L-11	42	1	-	-	-	9	-
C-15	44	-	-	-	1	-	-
C-17	48	1	-	-	2	-	-
C-5	54	-	-	-	1	-	-
D-16	66	-	1	-	-	-	-
H	72-78	-	-	-	2	-	-
F-1	no loc.	1	-	-	-	-	-
Total		16	4	3	20	9	3

Bone Artifacts

Tubular Bone Beads

A total of 317 tubular bone beads, consisting of 22 fish vertebrae[1], 156 straight mammal bone tubes, 121 constricted mammal bone tubes, and 12 incised bone tubes was recovered from the site.

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[1]The fish vertebra spools appear to be one marker of the Posa Phase as they are found also in Sites 135, 147, 197 and 198. All specimens have had their spines ground off so that the cellular structure of the bone usually is exposed on both the inner and outer walls.

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Table 60
Bone Beads, Site 100

Pit or Burial	Depth in.	CC5	EE1b	EE1c	EE2a	EE2b	EE2c
B-5	14	-	-	-	-	1	-
H	18-24	1	-	-	-	-	-
D-1	24	-	-	-	-	-	2
F-4	27	-	-	-	2	-	-
F-16	27	-	-	-	-	-	1
B-9	30	-	7	-	-	-	-
B-11	30	-	3	-	-	-	-
D-4	30	-	1	-	-	-	-
K-9	30	1	-	-	-	-	-
C-3	36	-	27	-	-	-	-
C-7	36	4	-	-	-	-	-
L-3	36	-	3	-	-	-	-
J-17	42	-	10	-	-	-	-
K-4	42	-	3	-	-	-	-
L-4	42	-	96	-	-	-	-
C-17	48	-	1	-	-	-	-
F-7	48	1	-	-	-	-	-
F-10	48	-	3	-	-	-	-
H	54-60	1	-	-	-	-	-
C-18	60	1	-	-	-	-	-
D-16	66	1	-	-	-	-	-
D-18	78	11	-	-	-	-	-
C-3	no loc.	-	-	-	-	1	-
E-2	no loc.	-	-	21	-	-	-
F-12	no loc.	-	-	1	-	-	-
J-4	no loc.	-	-	1	-	-	-
K-24	no loc.	-	-	-	-	-	5
-	no loc.	2	7	98	-	-	-
Total		23	161	121	2	2	8

Bone Fishhooks

A total of 22 bone fishhooks, consisting of 20 simple gorges, one circular hook, and one unique specimen was recovered from the site.

Table 61
Bone Fishhook Distribution, Site 100

Pit or Burial	Depth in.	Gifford Type T1f	X	Unique
H	6-12	1	-	-
H	12-18	1	-	-
B-7	14	1	-	-

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Table 61 (continued)

H	18-24	1	-	-
D-9	24	-	1	-
H	24-30	1	-	-
H	30-36	1	-	-
K-7	36	1	-	-
L-10	42	1	-	-
H	42-48	4	-	-
F-10	48	1	-	-
F-32	48	1	-	-
H	66-72	1	-	-
H	72-78	2	-	-
H	84-90	1	-	-
J-4	no loc.	1	-	-
J-5	no loc.	1	-	-
-	no loc.	-	-	1
Total		20	1	1

Bone Whistles

Nine bone whistles were recovered from the site, 7 specimens being of mammal bone and 2 of bird bone.

Table 62
Bone Whistles, Site 100

Burial No.	Depth in.	Gifford Type FF1a	FF1b	FF2
B-4	12	1	-	-
B-5	14	1	-	-
C-1	36	-	1	-
C-3	36	-	1	-
K-7	36	-	1	-
C-11	40	-	-	1
L-4	42	-	-	1
D-6	48	-	1	-
-	no loc.	1	-	-
Total		3	4	2

Bone Awls

A total of 62 bone awls and awl fragments was recovered from the site, including five recognizable types of complete awls and 25 awl point fragments.

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Table 63
Bone Awls, Site 100

Pit or Burial	Depth in.	AlbII	AlbIV	AlcI	A2	A4aI	Indeterminate	fragment
A-5	6	-	-	-	-	-	-	2
H	6-12	-	-	-	-	-	-	1
B-4	12	-	-	-	-	-	-	1
B-5	14	-	-	-	-	14	-	-
F-20	14	-	-	-	-	-	-	1
H	18-24	-	-	-	-	-	-	2
F-16	27	1	-	-	-	-	-	1
B-9	30	-	-	-	-	6	-	-
H	30-42	-	1	-	-	-	-	6
C-7	36	-	-	-	-	2	-	-
L-10	42	-	-	-	-	-	-	1
L-11	42	-	1	-	-	-	-	-
C-15	44	1	-	-	-	-	-	-
H	48-54	-	-	-	-	-	-	2
H	60-66	-	-	-	-	-	-	3
D-x	66	-	-	-	-	-	1	-
H	72-78	-	-	-	-	1	-	-
H	84-90	-	1	-	-	-	-	-
F-11	no loc.	-	-	-	-	-	-	1
J-4	no loc.	-	-	-	1	-	-	-
-	no loc.	-	-	2	1	-	4	4
Total		2	3	2	2	23	5	25

Flakers

The University party recovered 36 flakers, of three types, from the site. Most of the specimens were made from mammal ribs.

Table 64
Flaker Distribution, Site 100

Pit or Burial	Depth in.	Gifford Type C5	C6	C7
A-13	12	1	-	-
H	18-24	1	-	-
F-1	24	3	-	-
H	24-30	3	-	-
F-16	27	1	-	-
B-9	30	1	-	-
F-18	30	-	1	-
C-9	36	-	-	1
K-7	30	1	-	-
J-16	42	1	-	-

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Table 64 (continued)

L-4	42	2	-	-
H	42-48	1	-	-
C-15	44	1	-	-
H	54-60	1	-	-
H	60-66	2	-	-
D-x	66	2	-	-
H	72-78	2	-	-
-	no loc.	10	1	-
Total		33	2	1

Miscellaneous Bone Artifacts

Five types of miscellaneous bone artifacts have been identified, including whalebone chisels and wedges, and a ceremonial wand, sword-fish bills, and a cetacean vertebra mortar.

Table 65
Miscellaneous Bone Artifacts, Site 100

Pit or Burial	Depth in.	Gifford Type D1	D6	K2	Y	BB1	Indeterminate
F-1	24	1	-	-	-	-	-
H	24-30	1	-	-	-	-	-
B-9	30	-	1	-	-	-	-
B-11	30	1	-	-	-	-	-
D-5	30	-	-	-	-	1	-
F-22	30	1	-	-	-	-	-
F-26	30	-	-	-	-	-	2
C-7	36	1	-	-	-	-	-
C-11	40	-	-	-	-	-	1
B-3	42	-	-	-	1	-	-
K-21	42	1	-	-	-	-	-
D-6	48	-	-	-	-	-	1
H-2	48	-	1	-	-	-	1
H	48-54	-	-	-	-	-	1
H	60-66	1	-	-	-	-	-
H	72-78	-	-	-	-	-	1
D-12	78	2	-	-	-	-	1
H	96-120	-	-	-	-	-	1
E-1	no loc.	-	-	-	-	-	1
F-x	no loc.	-	-	-	1	-	-
-	no loc.	1	1	1	-	-	1
Total		10	3	1	2	1	11

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Twined Basketry

These 14 specimens were recovered between 12 and 66 in. and include fragments and asphalt impressions. All examples are plain twined with the slant of twist down to the right, 4 being made of Juncus and 8 of tule rush. Basketry materials used at this site have been inferred from data on ethnohistoric specimens (Deetz and Dawson 1965). The chart below shows a definite correspondence between the use of warp and weft of the same material.

Table 66
Twined Basketry, Site 100

Pit or Burial	Depth in.	Warp		Weft	
		2-ply tule cordage	3 Juncus stem bundle	tule rush	whole Juncus rush
H	12-18	x	-	x	-
F-20	14	-	x	-	x
H	18-24	x	-	x	-
F-1	24	-	x	-	x
H-4	24	-	x	-	-
F-18	30	x	-	x	-
F-22	30	x	-	x	-
H	30-36	-	x	-	x
C-2	36	x	-	x	-
F-7	48	x	-	x	-
H	54-60	-	-	-	-
H	60-66	x	-	x	-
-	no loc.	x	-	x	-
-	no loc.	-	-	-	-

Coiled Basketry

All 4 specimens were coiled from left to right and were sewn with a simple interlocking stitch. Two examples came from unspecified locations, while the other specimens came respectively from Burial A-9, 14 in., and Burial F-40, 27 in.

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Matting

Mats made of surf grass (Phyllospadix spp.) bundles were plain twined with the twist of the weft down to the right. Different types of selvages and varying numbers of weft elements have been noted.

Table 67
Matting, Site 100

Pit or Burial	Depth in.	No. of specimens
A-5	6	1
A-2	8	1
A-13	12	1
B-4	12	1
A-9	14	1
B-5	14	1
F-20	14	1
A-14	18	1
A-6	20	1
D-9	24	1
F-1	24	1
H	24-30	1
B-9	30	1
B-11	30	1
F-18	30	1
F-21	30	1
F-26	30	1
B-1	34	1
C-7	36	1
F-6	36	1
F-41	36	1
K-7	36	1
L-10	40	1
K-13	42	1
K-11	44	1
F-10	48	1
F-8	54	1
D-16	66	1
F-42	66	1
F-3	no loc.	1
F-5	no loc.	1
F-9	no loc.	1
F-12	no loc.	2
K-24	no loc.	4
-	no loc.	1
-	no loc.	1
-	no loc.	1
Total		41

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Cordage

The 7 specimens of Phyllospadix spp. cordage were found as burial associations.

Table 68
Cordage, Site 100

Burial No.	Depth in.	Direction of twist	Strands in cord	Diameter mm.	Remarks
F-1	24	left	2	2.0	twisted
F-22	36	right	2	1.0	twisted
F-7	48	left	2	1.0	twisted
K-24	no loc.	left	2	6.0	twisted
K-24	no loc.	right	3	6.0	3-strand braid
K-24	no loc.	right	3	3.0	3-strand braid
-	no loc.	right	2	3.0	twisted

Miscellaneous Objects

Wooden Canoe Planks

These 6 roughly rectangular planks were 1 cm. thick and 7 cm. wide. All but one unassociated specimen were recovered from Burial F-26 at thirty in. Two pieces had finished edges. All had oblong drilled holes about 1.0 by 1.5 cm. around the edges. Holes and plank edges were caulked with asphalt. The following diagram is a reconstruction of the position of the planks, as found in situ.

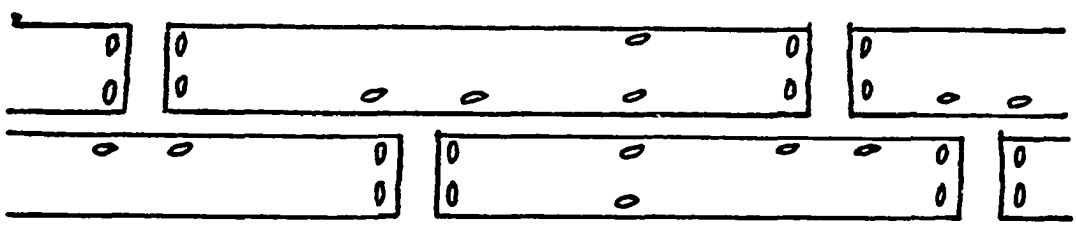

Plate 53 Canoe Planks

SCrI 100

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Asphalt Lumps

A total of 49 asphalt lumps were recovered from the site. Some specimens were haft fragments, grass skirt weights, and canoe plank plugs.

Table 69
Asphalt Lump Distribution, Site 100

Pit or Burial	Depth in.	No. of specimens
H	0-6	1
B-4	12	1
H	12-18	1
F-20	14	5
H	18-24	1
H	24-30	1
F-16	27	4
K-14	27	1
F-21	30	12
F-22	30	3
H	36-42	1
F-27	42	2
J-17	42	2
L-4	42	1
H	42-48	1
C-17	48	1
F-32	48	1
H	66-72	1
H	72-78	1
D-12	78	1
H	78-84	1
H	84-90	1
K-24	no loc.	1
-	no loc.	2
-	no loc.	2
Total		49

Charcoal

Three fragments of wood charcoal were recovered from the site, 1 from Pit H, 0-6 in., 1 from Burial C-9, 36 in., and 1 from Pit H, 48-54 in.

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SCrI-103, Johnson's Point

Site 103, on the south side of Santa Cruz Island at Johnson's Point, was visited briefly by the University group. Part of the midden deposit had eroded into the ocean over a 75 ft. high ocean cliff. A single pit was dug to a depth of 4 ft. Sand has drifted up from the beach and was deposited 2-6 ft. deep over the midden.

Burials

Two burials were recovered, both about 48 in. below the surface and less than 12 in. below the shell midden deposit.

Table 70
Burial Tabulation, Site 103

Burial No.	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
A-1	48	-	NNW	Su	A	F	X	-
A-2	48	Fl	NNE	LS	A	M	-	-

Ground Stone Artifacts

Steatite Bead

A single Type 5 steatite bead was recovered from the throat area of Burial A-1, 48 in.

Shell Artifacts

Shell Beads

A total of 30 shell beads of 3 types were recovered from the site, all of them from Burial A-1, 48 in. Types included 11 Type 1f, 12 Type 6a, and 7 Type 10b specimens.

Haliotis Ornaments

A single Type C1a *Haliotis* ornament was found with Burial A-1 at 48 in.

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Bone Awls

Three specimens of bone awl points were found with Burial A-1 at 48 in. All were indeterminate fragments.

Bone Fishhook Barb

A single specimen of a composite fishhook barb was found at 48 in. with Burial A-1.

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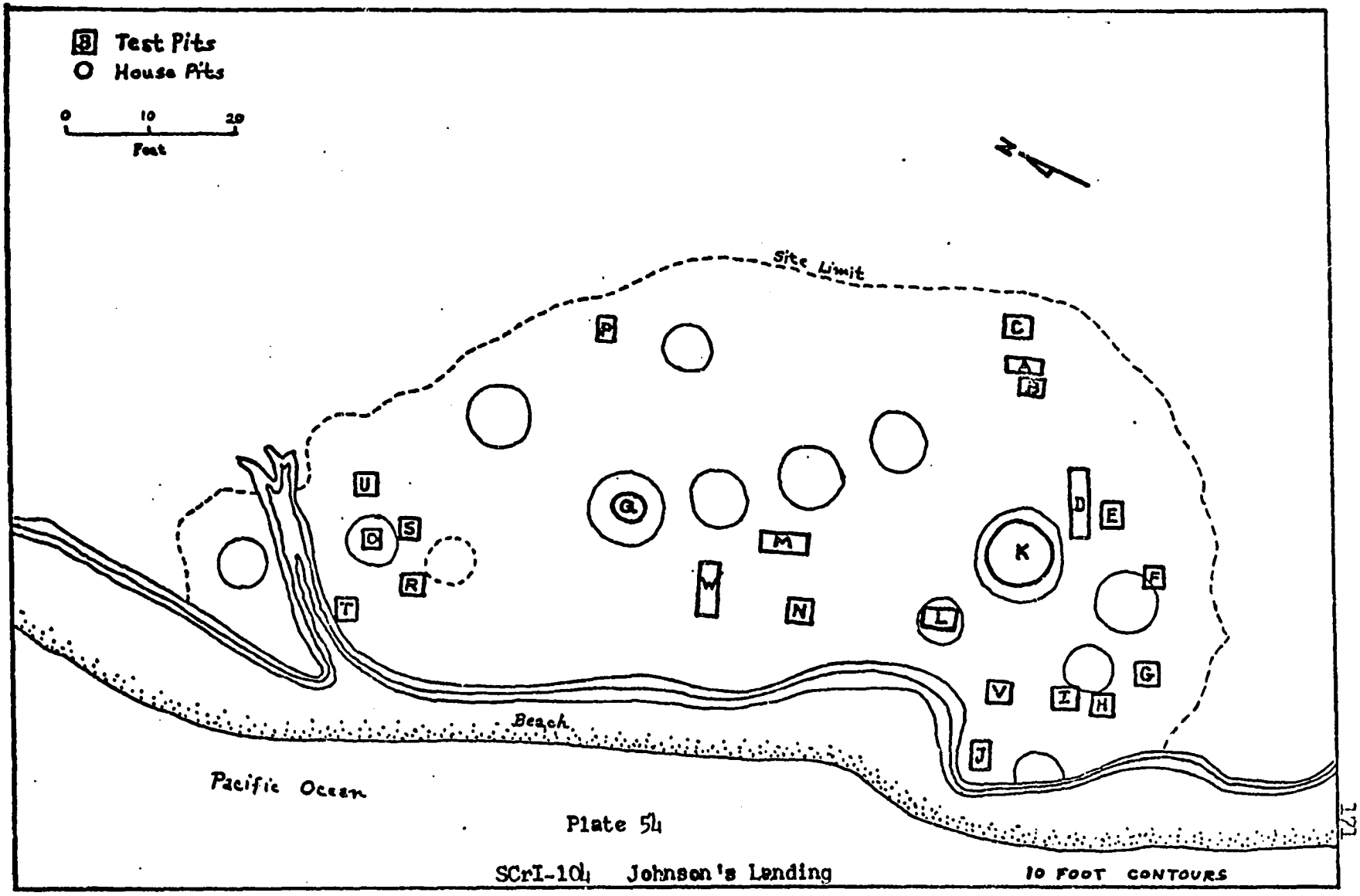

Plate 54

SCrI-104 Johnson's Landing 10 FOOT CONTOURS

SCrI-104, Johnson's Landing

SCrI-104 is located on the narrow coastal plain of the south coast of Santa Cruz Island between the mouths of Posa and Laguna canyons. At present, there is no perennial supply of fresh water for several miles to the east or west, but the beach abound in marine and bird life. A former lobster fisherman shanty still stands on the site. The entire site measures 110 by 50 ft. and is covered with annual grasses and cacti. Olson noted fourteen large circular depressions above the ocean bluff. Twenty-three test pits (A-W), were dug here in late June, 1928. Some were circular and followed the contours of the house pits. The midden deposit extends to a maximum depth of 81 in.

Chipped Stone Artifacts

Projectile Point

A single Type 6b chert point fragment was found on the surface, and measured 3 cm. in width.

Ground Stone Artifacts

Mortars

Two stone mortars were recovered from the site at unspecified depths, including a Type 7a mortar and a fragmentary specimen.

Pestle

One pestle fragment of indeterminate type was recorded from Pit W at un unspecified depth.

Hammerstones

Two hammerstones were found at unspecified locations.

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Miscellaneous Ground Stone

A single abrading stone was recovered from the surface of the site, a grinding slab, Pit M, 48 in., and an asphalted pebble from Pit W at an unspecified depth.

Shell Artifacts

Shell Beads

Two Type 17a beads and 1 Type 26a bead were recovered from the surface of the site.

Shell Fishhooks

Six shell fishhooks were recovered from the site.

Table 71
Shell Fishhook Types, Site 104

Pit	Depth in.	Species			
		Mytilus Type 2	Mytilus fragment	Haliotis Type 2	Haliotis fragment
-	surface	2	-	-	-
A	22	-	-	1	1
no loc.	-	-	2	-	-
Total		2	2	1	1

Awls

Seven baleen awl fragments were recovered from the surface of the site, as well as 1 Type AlbII, 1 Type A4a II awls, and 1 Type AlaIII awl. A Type Y swordfish bill was recovered from Pit J at an unspecified depth, and a broken awl tip of indeterminate type was recovered from Pit A, 8 in.

Wedges

Three Type D6 wedges of bone and antler were recovered from the site including 1 antler and 2 bone wedges from Pit D, 26 in., and

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1 mammal rib wedge from the surface of the site.

Miscellaneous Bone Tools

Four blunt rib tools were recovered from Pit J at an unspecified depth, and 1 whalebone pestle was found in Pit M, 48 in.

Fibrous Materials

Basketry

A single twined basket in asphaltum was found in Pit K at an unspecified depth. Twining was down to the right with a single weft element over a 2-rod warp.

Cordage

Five specimens of surf grass (Phyllospadix spp.) cordage were found in the site.

Table 72
Cordage, Site 104

Pit	Depth in.	Remarks
S	3	matted piece
T	30	3 strand braid
J	no loc.	3 strand braid
W	no loc.	3 strand braid
-	no loc.	matted piece

Miscellaneous Specimens

Fragments of acorns or cherry pits were found at Pit K, at an unspecified depth and a wood fragment was recovered from Pit S, 3 in.

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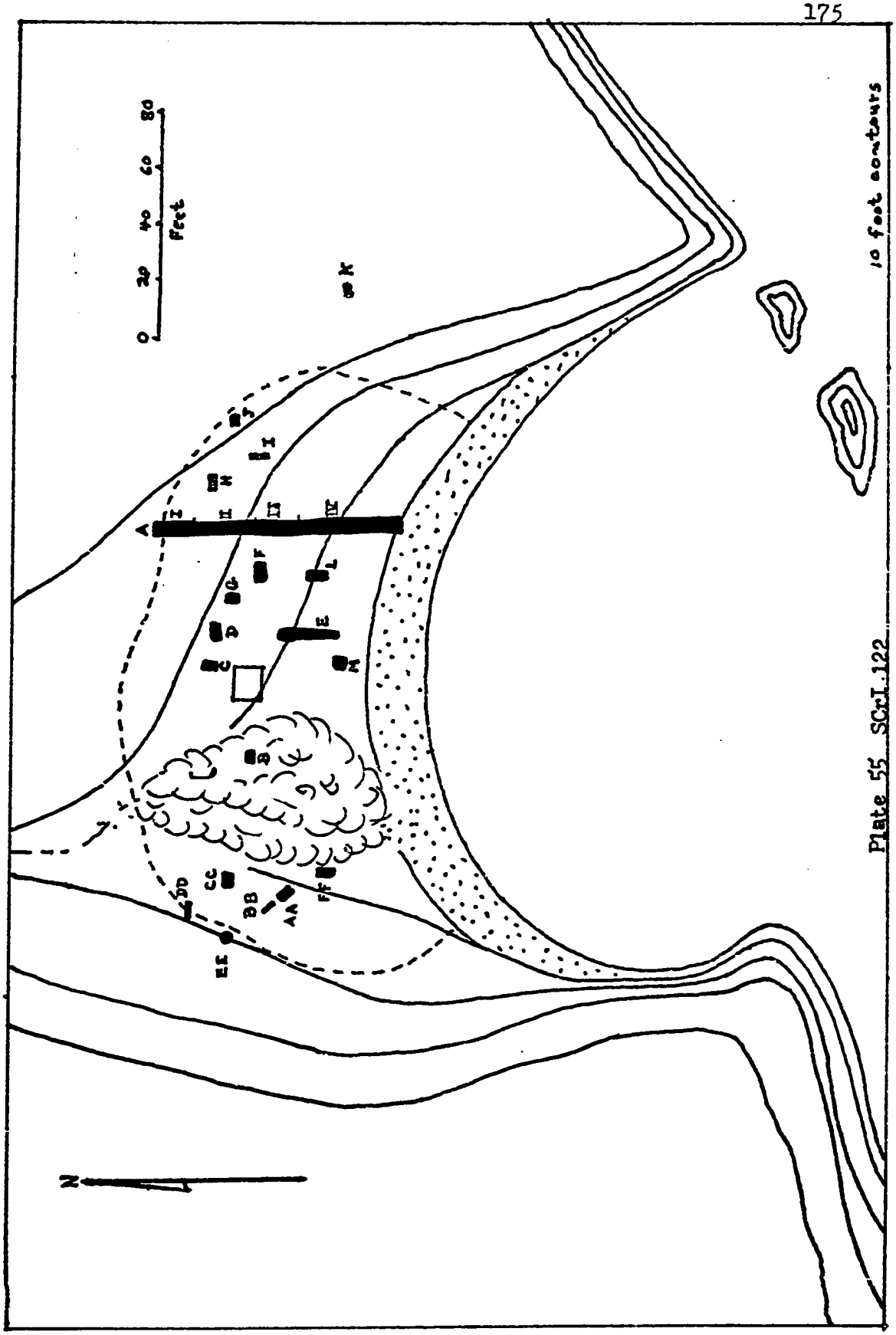

Plate 55 SCrI.122

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SCrI-122, Willows

SCrI-122 is located at the mouth of Willow Creek on the south coast of Santa Cruz Island. The canyon drains an extensive area of the interior. The site extends on both sides of the creek mouth. A fisherman's shanty, Paulson's House, stood on the site at the time of Olson's visit in 1927. D.B. Rogers of the Santa Barbara Museum of Natural History collaborated with Olson at this site (Rogers 1929, 313). The habitation site was characterized by ashy shell midden soil to a maximum depth of 108 in. The party discovered a small cemetery. A total of 18 pits, numbered A-M and AA-FF, was excavated. Olson's Pit A, a long trench, bisected the midden on a north-south axis, through one of the most concentrated cultural deposits on Santa Cruz Island.

Stratigraphy

Rogers (1929, 314) noted that the consistency of the deposit was uniform and consisted mainly of food debris. Olson, however, was able to distinguish complex stratigraphy, consisting of alternating layers of shell, mixed midden soil, and sterile soil. Eight ash lenses, the remains of hearths, were noted.

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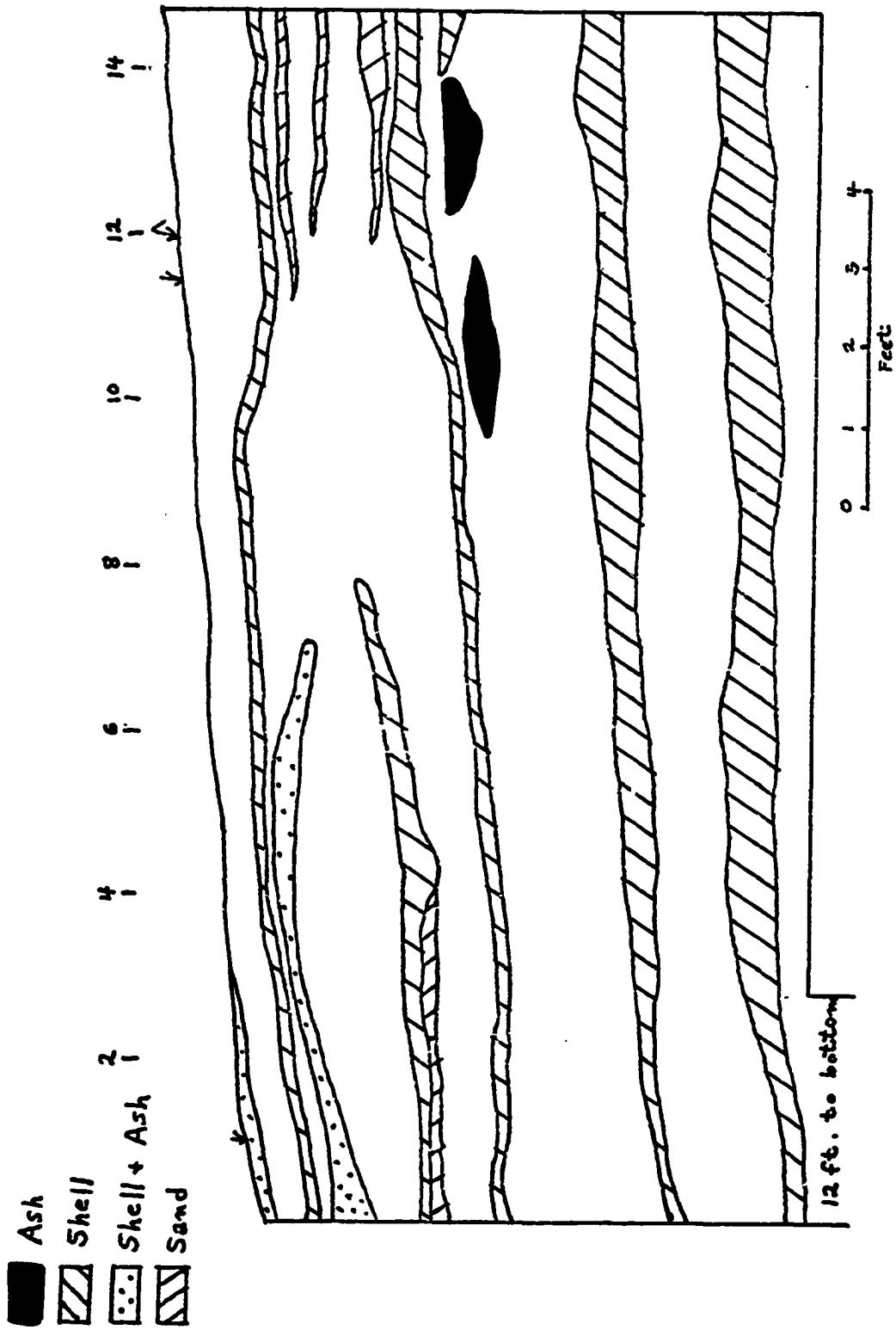

Plate 56 SCrI-122

Pit A Section I

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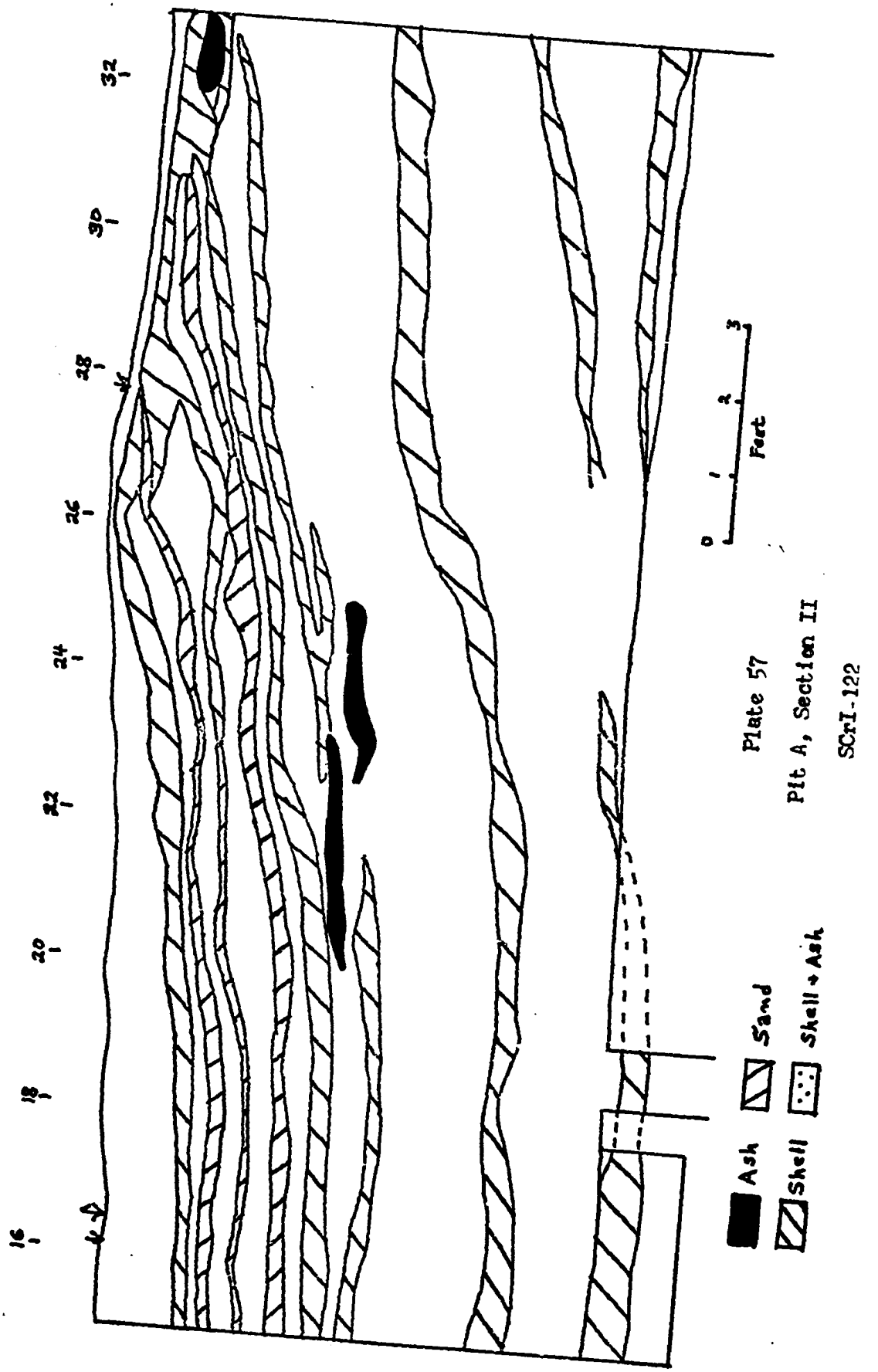

Plate 57

Pit A, Section II

SCrI-122

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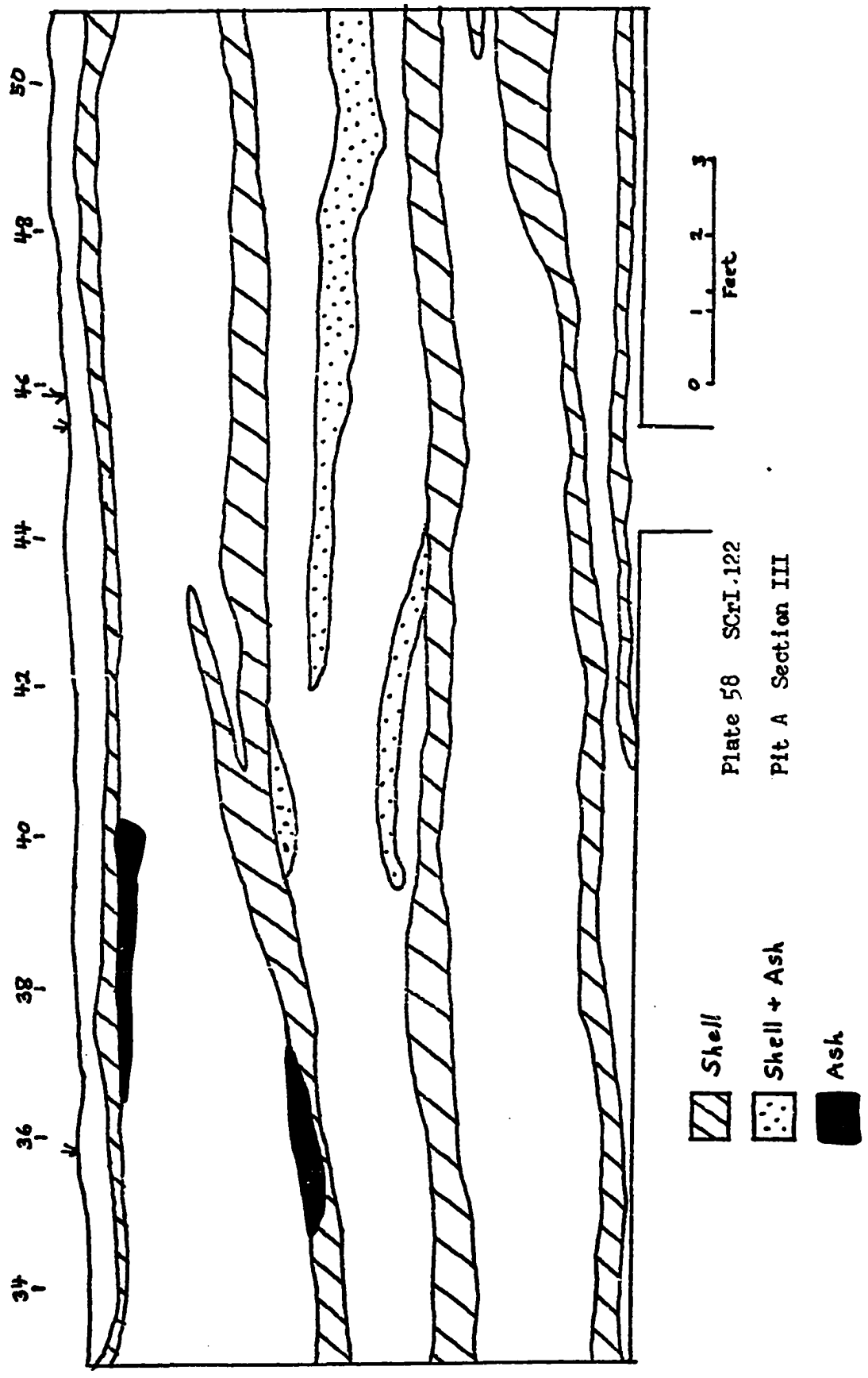

Plate 58 SCrI.122

Pit A Section III

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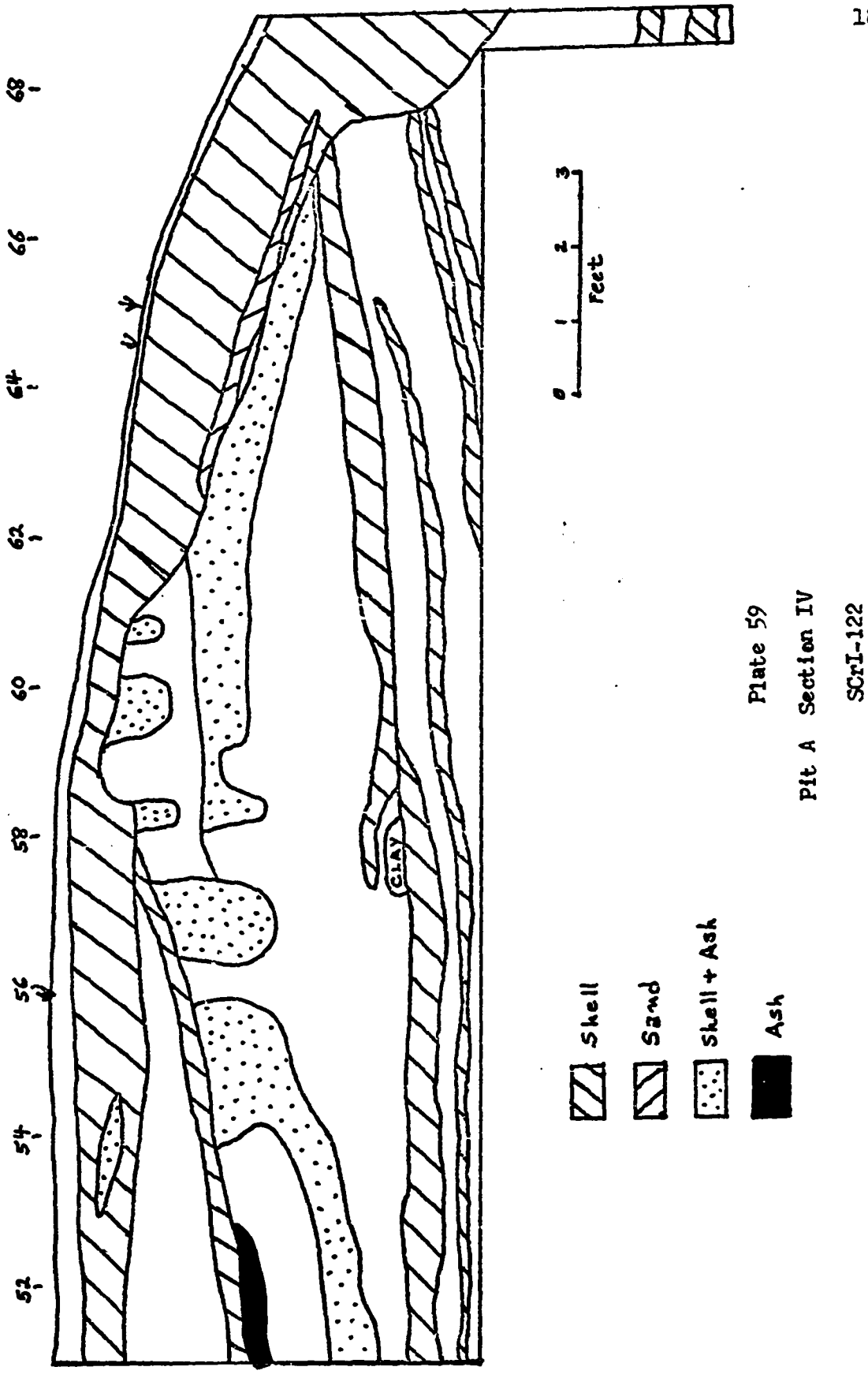

Plate 59

Pit A Section IV

SCrI-122

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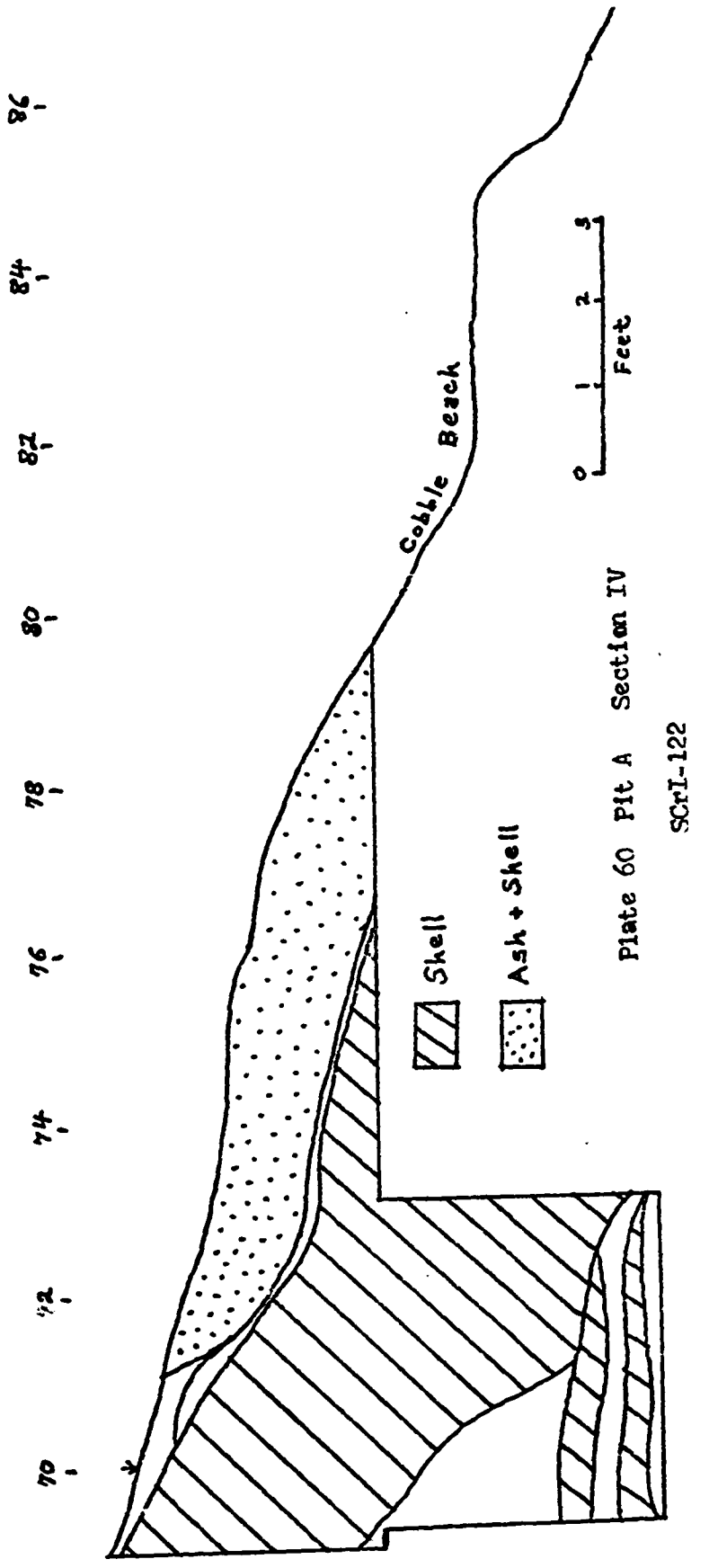

Plate 60 Pit A Section IV

SCrI-122

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Burials

Only three burials were recovered from Site 122, all of them from Pit L. Two individuals were located beneath offerings of whole Olivella shells.

Table 73
Burial Tabulation, Site 122

Burial	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
L-1	22	Fl	W	Pr	A		x	-
L-2	45	Fl	SW	RS	A		-	-
L-3	52	Fl	NW	Pr	A		x	-

Chipped Stone Artifacts

Drills

Three chert drills, all of Type 2 were recovered from the site, 2 from the surface and a third from Pit A-III, 0-24 in.

Scrpaers

A total of 17 more scrapers were recovered from the site, consisting of 14 chert, 2 igneous, and one quartzite specimen.

Table 74
Scraper Distribution, Site 122

Pit	Depth in.	Core	Flake
-	surface	3	2
A-II	0-24	1	1
A-III	0-24	3	4
-	48-72	-	2
E	no loc.	-	1
Total		7	10

Ground Stone Artifacts

Steatite Bowl

A single fragment of a steatite vessel was recovered from Pit E at an indeterminate depth.

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Mortars

All 19 specimens were fragmentary and of indeterminate type except for one Type 7a mortar recovered from Pit A-III, 0-24 in. It had a height of 5 cm., an external diameter of 9.2 cm., a bowl diameter of 6.0 cm., and a bowl depth of 1.5 cm.

Pestles

Ten pestles of 2 types were recovered from the site.

Table 75
Pestle Distribution, Site 122

Pit	Depth in.	Type 1a	Type 2	fragment
A-I	0-24	-	-	1
A-II	0-24	1	-	-
A-III	0-24	1	-	-
A-IV	0-24	-	-	1
A-I	24-48	1	-	-
A-II	48-72	-	-	1
A-III	48-72	-	1	-
A-III	72-96	-	1	-
B	no loc.	1	-	1
Total		4	2	4

Doughnut Stones

Five doughnut stones were recovered from the site, one each between 0-24 in. in Pits A-I, A-II, and A-IV, respectively. The 2 other specimens were recovered respectively from the surface and from Pit J at an unspecified depth.

Miscellaneous Ground Stone Artifacts

Four abrading stones (AS), 8 hammerstones (HS), 4 grinding stones (GS), and 102 asphalted boiling pebbles (AP) were recovered from the site.

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Table 76
Miscellaneous Stones, Site 122

Pit	Depth in.	AS	HS	GS	AP
A-IV	0-12	-	-	-	5
A-II	0-24	-	-	-	47
A-III	0-24	-	3	-	7
A-I	24-48	2	-	-	31
A-III	24-48	-	-	-	1
A-I	48-72	-	-	2	-
A-IV	48-72	-	-	1	-
A-II	72-90	-	2	1	-
A-III	108	-	-	-	1
B	no loc.	-	-	-	1
E	no loc.	-	1	-	3
I	no loc.	-	1	-	-
J	no loc.	-	-	-	6
K	no loc.	1	1	-	-
-	no loc.	1	-	-	-
Total		4	8	4	102

Shell Artifacts

Whole Haliotis Shells

Four whole Haliotis shells were recovered from the site.

Table 77
Whole Haliotis Shells, Site 122

Pit	Depth in.	rufescens	fulgens	indeterminate
A-I	0-24	1	1	-
A-II	0-24	-	-	1
A-IV	0-24	1	-	-
Total		2	1	1

Miscellaneous Shell

A perforated giant limpet and a worked Haliotis fragment, were recovered from unspecified depths in Pits D and E, respectively.

Bone Artifacts

Awls

Three baleen awls were recovered from Pit A-II, 0-24 in., 2 indeterminate specimens from Pit A-III, 0-24 in., and 1 indeter-

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minate specimen from Pit E at an unknown depth.

Miscellaneous Bone Artifacts

Olson recovered 1 Type T1g bone fishhook and a C5 bone tool from the surface of the site, a Type BB1 mortar from Pit A-I, 0-24 in., and a Type C5 specimen from Pit A-I, 48-72 in. A single specimen each of a Type Y and a Type C5 tool were found respectively in Pits B and E at unspecified depths.

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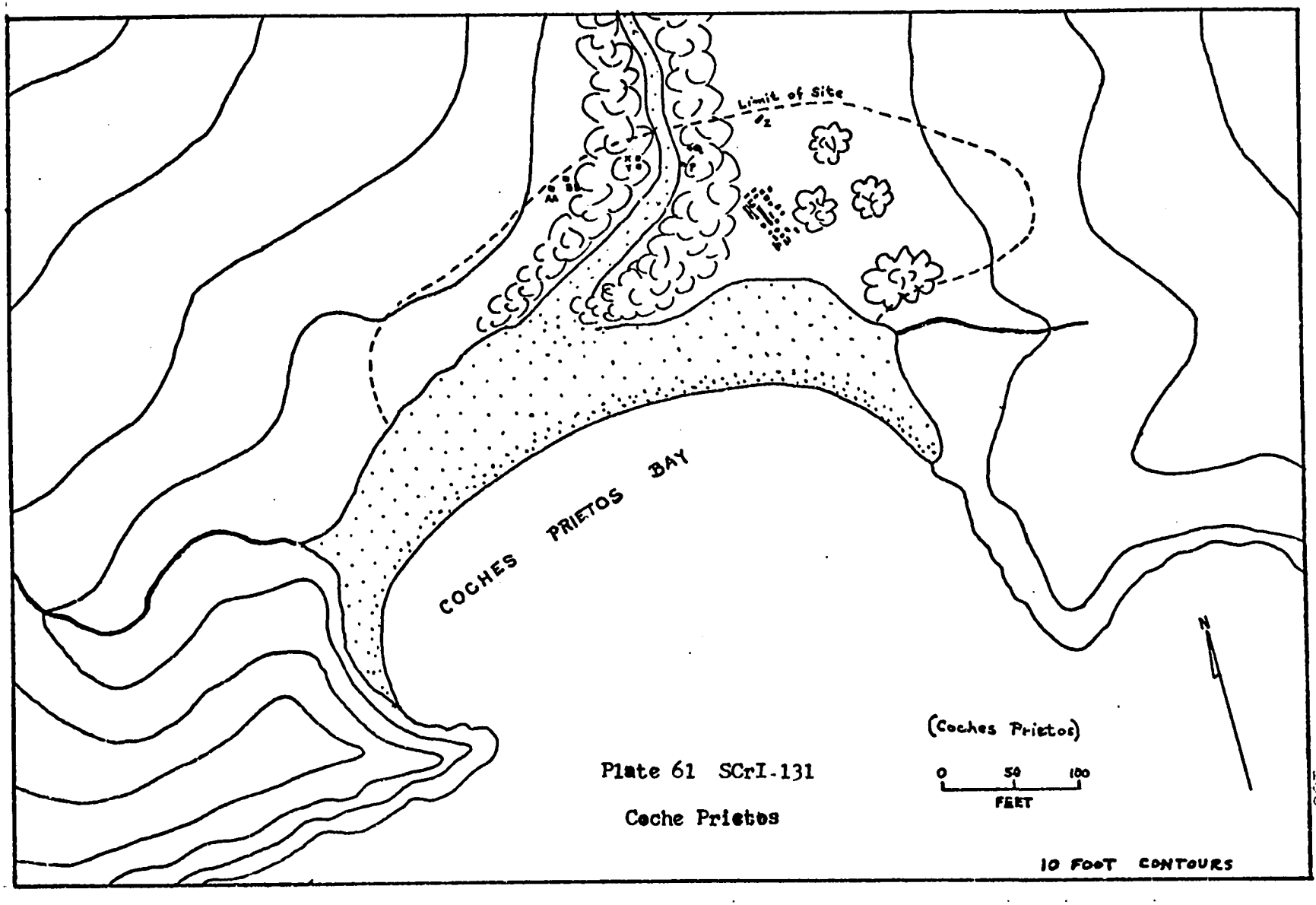

SCrI-131, Coche Prietos

Site 131 is located on the south coast of Santa Cruz Island, at the mouth of Coche Prietos Canyon. Along the northern shore of this well protected cove, a shell midden deposit extends for about 500 ft. and reaches 100 ft. in breadth. The midden is divided by a creek which provides a year-round supply of fresh water. The site occupies the lowest of a series of beach terraces on which Olson dug his test pits.

Stratigraphy

In 1929, Olson sank 34 test pits into the site, numbered A-Z and AA-GG. Pit H, in the center of the major excavation activities, measured 30 by 8 ft. Sterile sand was reached in most pits at about five feet. The soil was characterized by alternate layers of sand and shell. Unfortunately, accurate depth data were not recorded by the expedition.

Burials

Eleven burials were found by Olson's party. Most were flexed but were oriented in various direction.

Table 78
Burial Tabulations, Site 131

Burial No.	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
T-1	18	-	-	-	A	M	X	-
T-2	21	-	S	-	-		-	-
L-2	24	-	-	-	A	F	-	-
T-4	24	Fl	W	Pr	A	F	-	-
H-1	26	Fl	W	Pr	Y		X	X
L-4	26	-	-	-	A	F	-	-
L-1	30	Fl	N	RS	Y		-	-
T-3	30	-	-	-	A	M	X	-
L-3	36	Fl	SW	-	A	F	-	-
U-1	56	-	-	-	-		-	-
FF-1	no loc.	-	-	-	-		-	-

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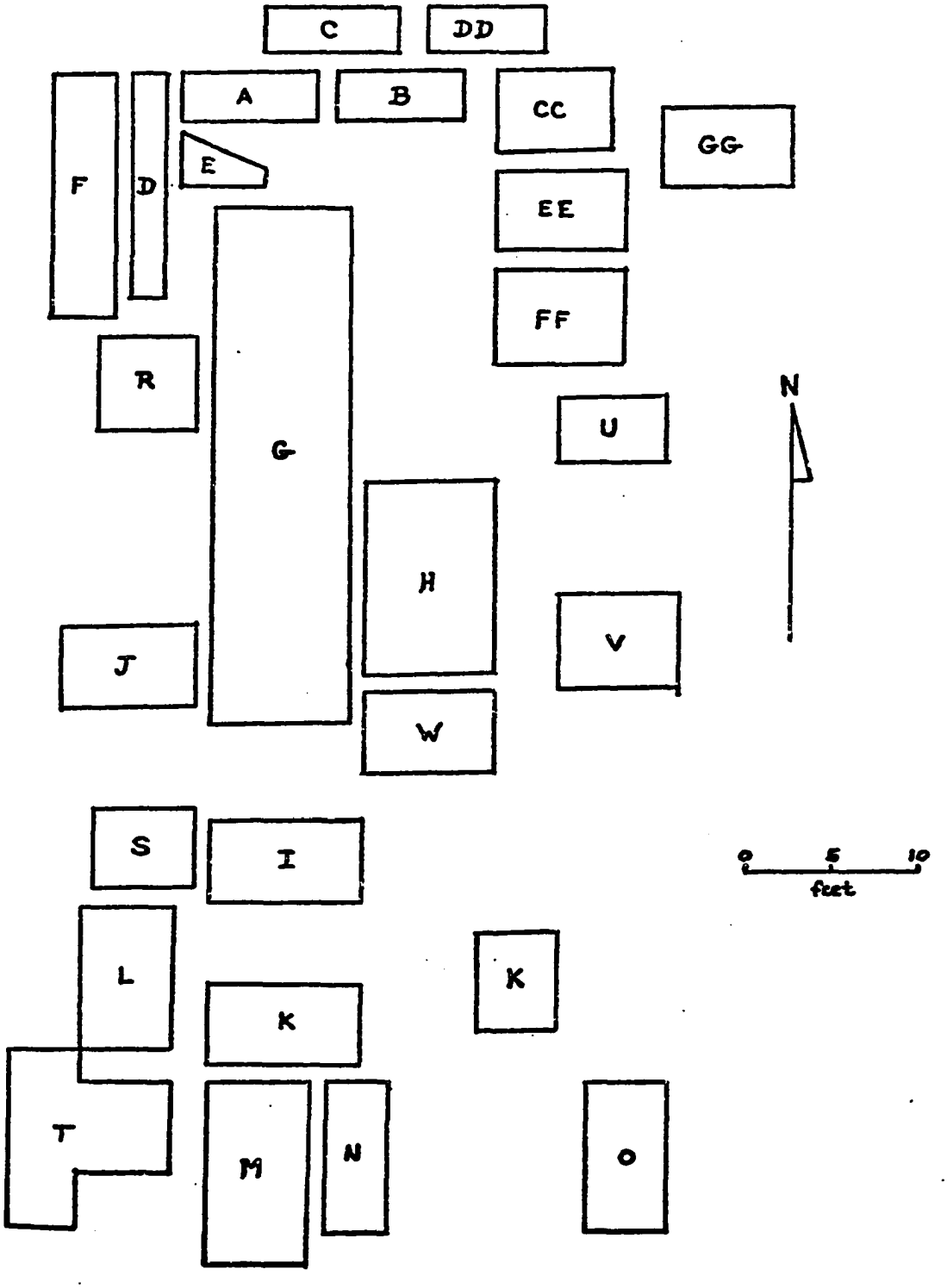

Excavation Units, SCrI 131

Plate 62

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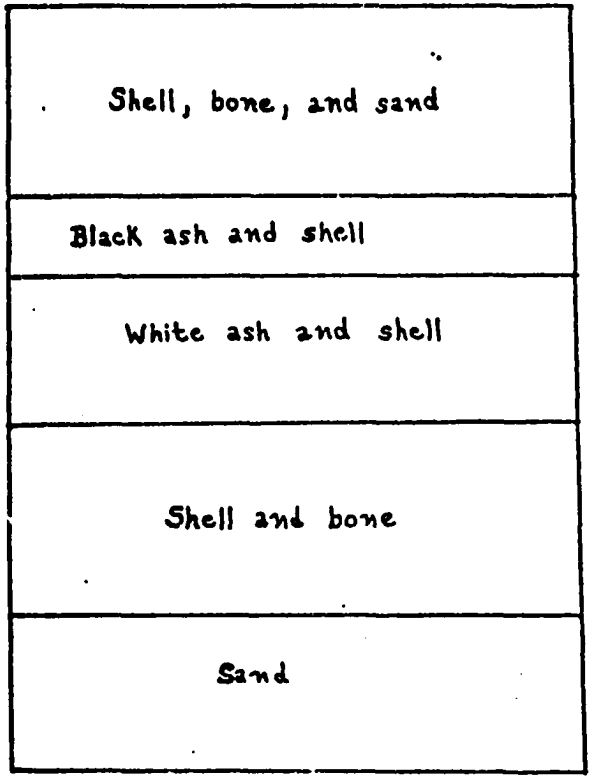
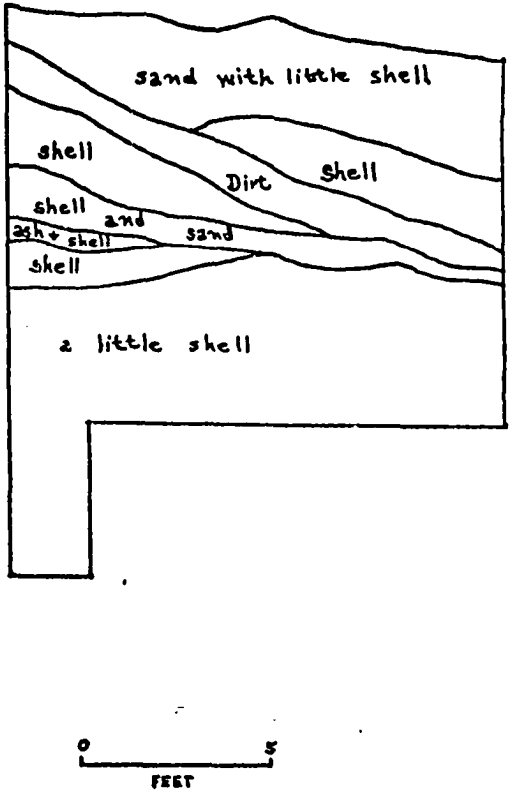


Pit S

SCrI-131

Plate 63



East Wall Pit V

SCrI-131

Chipped Stone Artifacts

Projectile Points

Four projectile points were found at unspecified depths and were all made of chert.

Table 79
Projectile Point Types, Site 131

Pit	Type 1c	2b	fragment
M	-	1	-
S	1	-	1
V	1	-	-
Total	2	1	1

Chert Drills

Fourteen chert drills of 2 types were recovered from the site at unspecified depths, including 12 Type 1 and 2 Type 2 specimens.

Scrapers

A total of 16 flake scrapers, all of chert with the exception of a single quartzite specimen was recovered from unspecified depths.

Table 80
Scraper Types, Site 131

Pit	Materials chert	quartzite
surface	1	1
AA	6	-
S	6	-
V	2	-
Total	15	1

Chert Flakes

A total of 34 chert flakes were recovered from unspecified depths.

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Table 81
Chert Flake Distribution, Site 131

Pit	No. of specimens
surface	14
M	3
R	5
S	8
T	1
V	2
W	1
Total	34

Ground Stone Artifacts

Doughnut Stones

Four doughnut stones of green serpentine were recovered from unspecified depths.

Table 82
Doughnut Stone Distribution, Site 131

Pit	No. of specimens
surface	1
AA	2
W	1
Total	4

Miscellaneous Ground Stone Artifacts

Olson's party recovered 6 hammerstones (HS), 3 abrading stones (AS), 25 asphalted pebbles (AP), 4 molded ocher lumps (OH), and 13 indeterminate specimens from unspecified depths at the site.

Table 83
Miscellaneous Stone Artifacts, Site 131

Pit	HS	AS	AP	OH	indeterminate
surface	-	-	2	-	-
AA	3	1	3	-	3
H	-	-	2	-	-
R	-	-	3	3	2
S	-	-	9	-	2
T	-	-	5	-	1
V	2	2	1	-	4
W	1	-	-	1	1
Total	6	3	25	4	13

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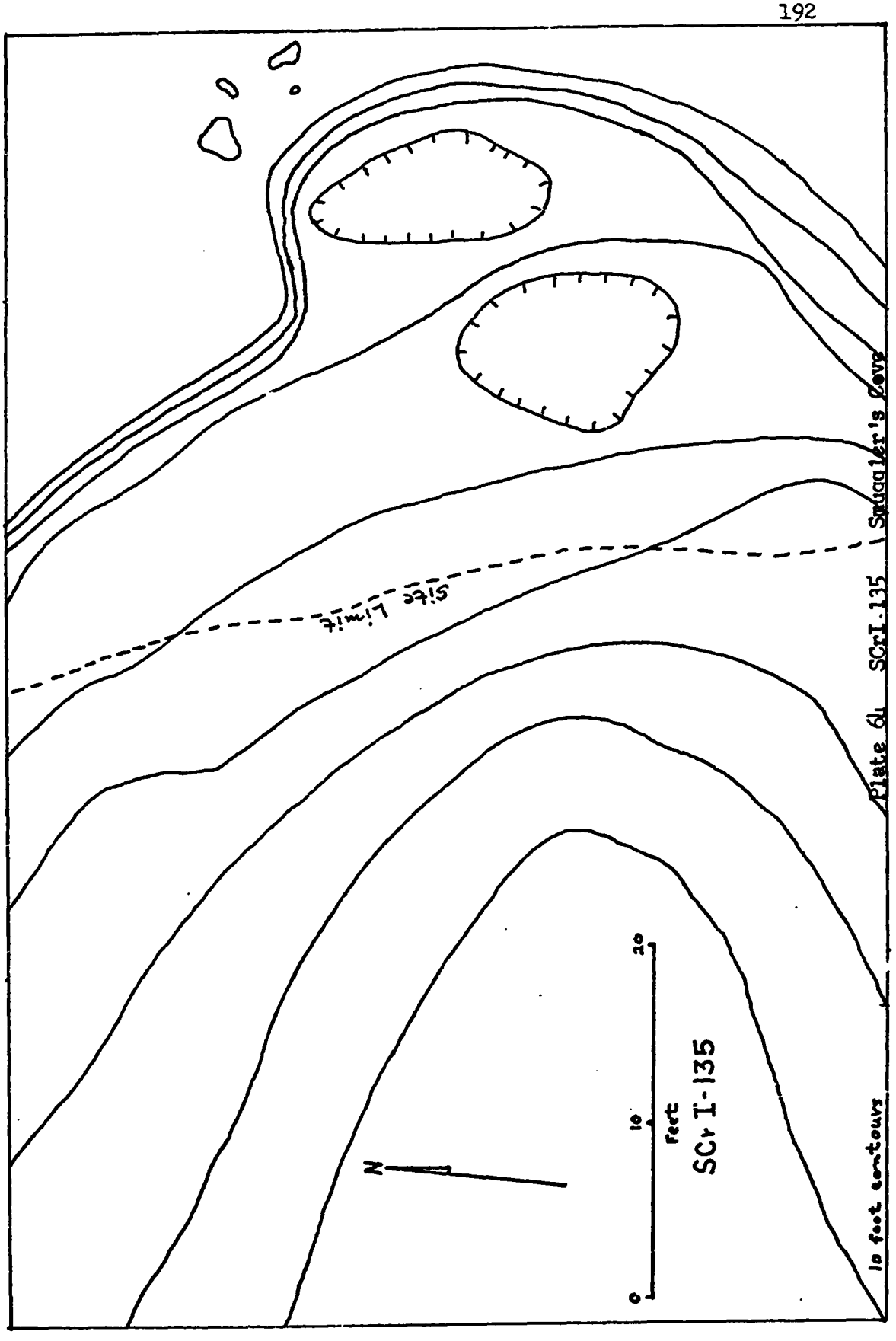

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SCrI-135, Smuggler's Point

Site 135, Olson's Site 192, is located on a series of narrow marine terraces on the point at the southern end of Smuggler's Cove. The site is covered with a growth of annual grasses growing in ashy shell midden soil. Two oval depressions are located on the two broadest terraces. The site is about 50 ft long in a north-south direction and about 30 ft. wide. Three pits, A-C, were dug to a maximum depth of 72 in.

Burials

Twenty-two burials were recovered to a depth of 72 in. Those for which data was kept were flexed and usually prone.

Table 84
Burial Tabulations, Site 135

Burial No.	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
A-2	0-18	-	-	-	-		X	-
B-1	12	Fl	NE	Pr	A		X	-
B-2	12	Fl	-	Pr	I		X	-
A-3	18-24	-	-	-	-		X	-
A-1	48	-	-	-	-		-	-
A-4	48	-	-	-	-		-	-
A-5	60	Fl	S	Pr	A		X	-
A-7	64	Fl	S	Pr	A		X	-
A-8	64	Fl	S	Pr	A		X	-
A-9	72	-	-	LS	-		X	-
A-6	no loc.	-	-	-	-		-	-
B-3	no loc.	-	-	-	-		-	-
B-4	no loc.	-	-	-	-		-	-
B-5	no loc.	-	-	-	-		-	-
B-6	no loc.	-	-	-	-		-	-
B-7	no loc.	-	-	-	-		X	X
C-1	no loc.	-	-	Sn	-		-	-
C-2	no loc.	-	-	RS	-		-	-
C-3	no loc.	-	-	Pr	-		-	-
C-4	no loc.	-	-	LS	-		X	-
C-5	no loc.	-	-	Pr	-		X	X
C-6	no loc.	Fl	N	Pr	A		X	-

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Chipped Stone Artifacts

Projectile Points

Seven chert projectile points of 4 types were recovered from the site, but only one was assigned a location.

Table 85
Projectile Point Distribution, Site 135

Burial No.	Depth in.	Type 1c	2a	2b	4b	fragment
A-9	72	-	-	-	-	1
-	no loc.	1	2	1	1	1
Total		1	2	1	1	2

Drills

Five chert drills were recovered from the site between 60 and 72 in.

Table 86
Drill Distribution, Site 135

Burial No.	Depth in.	Type 1	3
A-5	60	1	-
A-7	64	2	-
A-9	72	1	-
C-1	no loc.	-	1
Total		4	1

Miscellaneous Chipped Stone

A plano-convex chert scraper and a fragment of chipped quartz were recovered at an unspecified location. A whole quartz crystal from Burial C-5 was recorded at an unspecified depth.

Ground Stone Artifacts

Miscellaneous Ground Stone Objects

A nephrite doughnut stone from Burial A-5, 60 in., and a lump of molded ocher from Burial A-9, 72 in. were recovered from the site. A Type 3 sandstone mortar and a hopper mortar slab were found on

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the surface. Artifacts with no location data include a sandstone doughnut stone, a Type 2a pestle, 4 asphalted pebbles, 3 natural lumps of ocher, and a fragment of a sawed stone.

Shell Artifacts

Shell Beads

A total of 851 shell beads of 15 different types were recovered from the site. A summary follows in Table 88.

Haliotis Ornaments

A total of 68 Haliotis ornaments of 23 types was recovered from the site and is summarized in Table 89.

Shell Fishhook

A single Type 2 fishhook of Haliotis shell was recovered from Site 135 without depth or location data.

Bone Artifacts

Miscellaneous Bone Artifacts

The 10 artifacts in this category included 4 awls, 2 rib flakers, a rib strigil, a bipointed gorge, a fish vertebra spool, and an indeterminate tool.

Table 87
Miscellaneous Bone Artifacts, Site 135

Burial No.	Depth in.	Type A	A2	A3	C5	F	T1b	CC5	indeterminate
A-5	60	-	1	-	2	-	1	-	-
A-7	64	-	-	-	-	-	-	-	1
-	no loc.	1	1	1	-	1	-	1	-
Total		1	2	1	2	1	1	1	1

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Table 88
Shell Bead Distribution, Site 135

Burial No.	Depth in.	Type 1f	3b	3g	5f	7a	7b	8	10a	11a	11b	12a	16a	21a	21b	22a
A-5	60	-	-	33	-	6	4	-	-	-	1	-	-	-	-	-
A-7	64	4	16	63	-	-	-	9	13	-	2	-	-	-	-	-
A-9	72	4	-	-	-	16	1	-	-	25	7	4	-	-	-	-
C-5	no loc.	-	-	380	4	-	-	-	184	22	4	1	-	1	41	1
-	no loc.	1	-	-	-	-	-	-	-	2	-	-	2	-	-	-
Total		9	16	476	4	22	5	9	197	49	14	5	2	1	41	1

Table 89
Haliotis Ornament Distribution, Site 135

Burial No.	Depth in.	Type E1	E10	G	Ga	Gaa	G6	I1	I2	I4	I6	I6aa	I7	I7aa	I9	I9g	I11	I12	I16	J1	M	M1	O2	P1	fragment
A-5	60	-	-	-	-	-	-	-	-	2	2	-	-	1	3	1	-	-	-	-	-	-	-	-	1
A-7	64	-	1	-	-	-	1	2	1	1	3	-	-	-	2	-	-	-	-	-	-	-	1	3	-
A-9	72	1	-	1	7	11	-	4	-	-	-	1	3	-	2	-	4	1	1	-	-	-	-	-	1
-	no loc.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	3	-	-	-
Total		1	1	1	7	11	1	7	1	3	5	1	3	1	7	1	4	1	1	1	1	3	1	3	2

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Miscellaneous Artifacts

Miscellaneous Objects

Two fragments of bark and remnants of human hair were recovered from Burial C-5 at un unspecified depth. A lump of asphaltum was recovered from an unspecified location.

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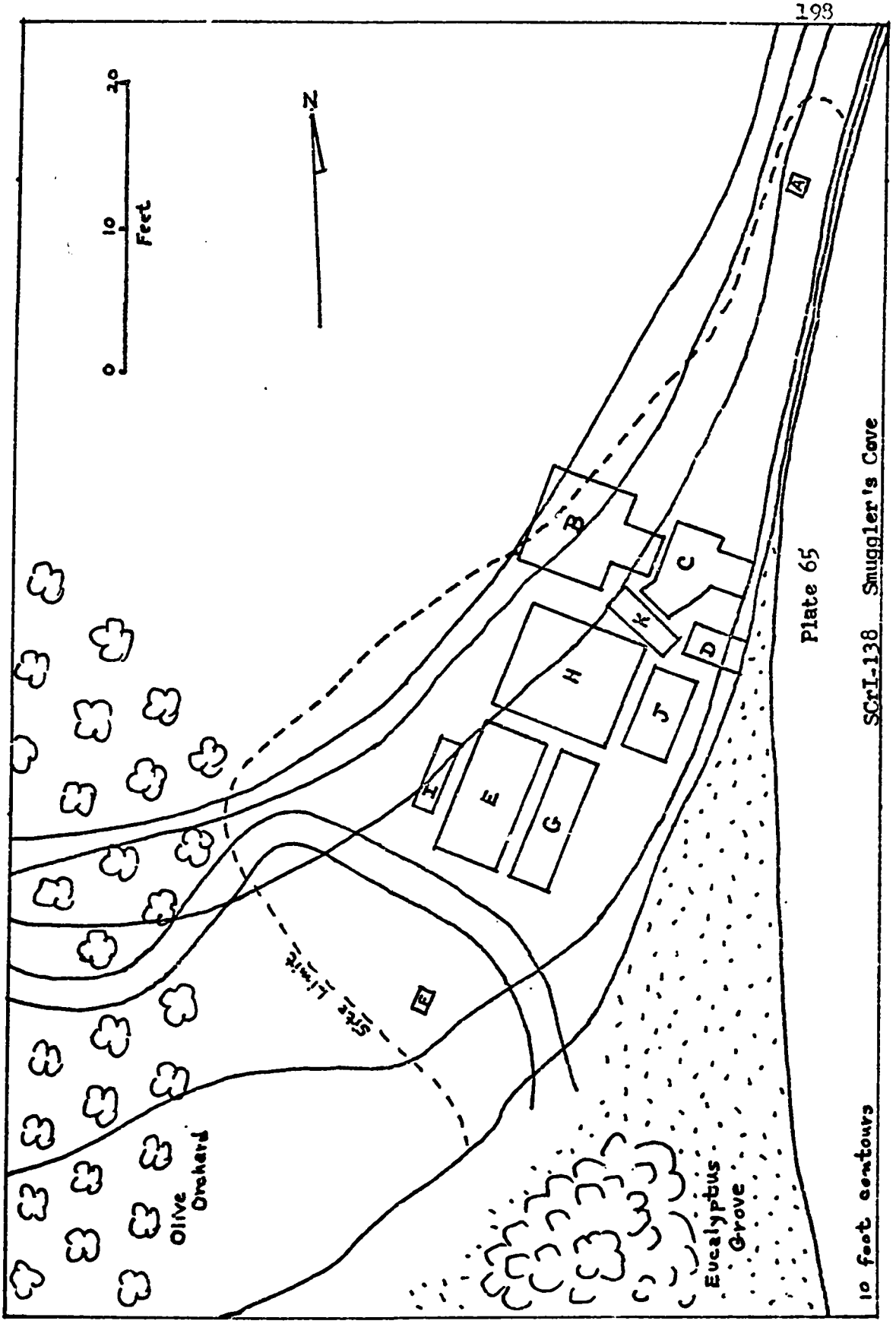

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SCrI-138, Smuggler's Cove

Site 138 is located 150-300 yds. east of the mouth of Smuggler's Creek on the 300 ft. chalk bluff overlooking the beach. Sections of tuff and chalk have slid away, carrying part of the site into the sea. The ground cover consists of annual grasses and scattered cactus plants. Eleven pits of varying sizes, labeled A-K, were dug during the 1928 season. Artifacts were recovered from the surface to a depth of 96 in.

Burials

Sixty-nine burials were recovered between 9 and 96 in. Those with data were characterized by flexed prone position with orientation between north and west.

Table 90
Burial Tabulations, Site 138

Burial No.	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
D-1	9	-	-	-	-		-	-
D-2	12	Fl	NNW	Pr	A		X	-
D-3	12	Fl	NE	Pr	A		X	X
D-4	14	Fl	N	Pr	A		X	-
B-2	18	-	NW	Pr	A		-	-
B-3	18	Fl	WNW	Pr	A		X	-
C-5	18	-	-	-	A		-	-
C-9	18	-	-	-	-		X	-
G-3	18	Fl	W	Pr	I		-	-
K-1	18	-	-	-	A		-	-
B-7	24	Fl	-	-	I		X	X
B-16	24	Fl	N	Pr	I		X	X
E-1	24	Fl	SSW	Pr	A		X	-
E-2	24	Fl	W	Pr	A		X	-
E-5	24	-	-	-	A		X	-
B-4	27	Fl	NW	Pr	A		X	-
C-2	27	Fl	E	Pr	I		X	-
C-14	27	-	-	-	-		X	X
E-6	27	-	-	-	-		X	-
E-7	27	Fl	W	Pr	A		-	-
G-1	27	Fl	W	Pr	A		X	-
B-1	30	-	-	-	-		X	X
B-17	30	-	-	-	-		-	-

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Table 90 (continued)

E-8	30	Fl	W	Pr	A		-	-
G-6	30	Fl	W	Pr	A	F	X	X
G-7	30	Fl	W	Pr	A	F	X	X
J-1	30	Fl	NW	LS	A		X	-
J-2	30	Fl	NW	Pr	A		-	X
B-8	32	-	-	-	A		-	-
G-2	32	Fl	NW	Pr	I		X	X
B-18	34	-	-	-	-		-	-
G-8	34	Fl	-	Pr	A	F	X	X
H-2	34	-	-	-	-		-	-
B-5	36	-	-	-	-		-	-
B-6	36	-	-	-	-		-	-
C-3	36	-	-	-	A		-	-
C-4	36	-	-	-	A		-	-
C-6	36	-	-	-	I		X	-
C-7	36	-	-	-	-		-	-
C-8	36	Fl	N	Pr	A		X	-
C-12	36	Fl	N	Pr	A		X	-
H-3	36	-	-	-	-		-	-
H-4	36	-	-	-	-		-	-
H-5	36	-	-	-	-		-	-
B-9	38	-	-	-	-		-	-
B-19	38	-	-	-	A		X	-
B-20	40	-	-	-	A		X	-
C-13	40	Fl	WSW	Pr	A		X	-
B-21	42	-	-	-	-		-	-
B-10	44	-	-	-	-		-	-
B-11	70	-	-	-	-		-	-
B-14	72	-	-	-	-		-	-
E-4	96	Fl	WSW	Pr	A		X	-
B-12	no loc.	-	-	-	-		-	-
B-13	no loc.	-	-	-	-		-	-
B-22	no loc.	-	-	-	A		-	-
B-x	no loc.	-	-	-	A	M	-	-
D-5	no loc.	-	-	-	-		-	X
C-1	no loc.	-	-	-	-		-	-
C-10	no loc.	Fl	NW	Pr	A		X	-
C-11	no loc.	-	-	-	-		-	-
E-3	no loc.	-	-	-	-		X	-
H-1	no loc.	-	-	-	-		-	-
G-4	no loc.	-	-	-	-		-	-
G-5	no loc.	-	-	-	I		-	-
G-9	no loc.	-	-	-	-		-	-
J-3	no loc.	-	-	-	-		-	-
J-4	no loc.	-	-	-	-		-	-
J-5	no loc.	-	-	-	-		-	-

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Chipped Stone Artifacts

Projectile Points

Seventeen projectile points of 4 types were recovered from the site from 18-40 in., including 11 specimens of chert and 6 of obsidian.

Table 91
Projectile Point Distribution, Site 138

Pit or Burial	Depth in.	Type 1a	2a	2b	4b	fragment
C-9	18	-	-	-	1	-
K-1	18	-	-	-	1	-
E-5	24	-	-	-	1	-
B-4	27	-	-	1	-	-
B-1	30	-	-	-	-	1
B-17	30	1	-	-	-	-
B-8	32	-	-	-	1	-
G-2	32	-	1	-	-	-
H-2	34	-	1	-	-	-
C-8	36	-	-	-	-	1
B-9	38	-	1	-	-	-
C-13	40	-	-	1	1	-
A	no loc.	-	-	-	-	1
B	no loc.	-	1	-	1	1
Total		1	4	2	6	4

Table 92
Projectile Point Raw Materials, Site 138

Type	Chert	Obsidian
1a	-	1
2a	4	-
2b	1	1
4b	3	3
Fragment	3	1
Total	11	6

Drills

A total of 319 chert drills of 3 types were recovered from the site from 12-40 in.

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Table 93
Drill Distribution, Site 138

Pit or Burial	Depth in.	Type 1	2	3
D-2	12	-	1	-
D-3	12	3	-	-
D-4	14	-	-	1
C-9	18	1	-	-
B-17	30	12	-	-
C-14	30	1	-	-
G-1	30	127	-	-
B-8	32	1	-	1
H-2	34	11	-	-
C-8	36	-	-	2
C-12	36	1	-	-
B-9	38	13	-	-
B-20	40	126	-	-
E-3	no loc.	2	-	-
B	no loc.	14	1	-
F	no loc.	1	-	-
Total		313	2	4

Scrapers

Ten chert scrapers were recovered from the site, including 9 flake scrapers and one core scraper.

Table 94
Scraper Distribution, Site 138

Burial No.	Depth in.	Type Core	Flake
D-2	12	-	1
D-4	14	1	-
C-9	18	-	1
B-17	30	-	1
C-8	36	-	1
B-9	38	-	5
Total		1	9

Quartz Crystals

Five quartz crystals were recovered from the site. Those specimens from Burials B-8 and B-9 had traces of asphaltum on the base, indicating that they may have been hafted.

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Table 95
Quartz Crystal Distribution, Site 138

Burial No.	Depth in.	No. of specimens
B-17	30	1
B-8	32	2
B-9	38	1
C-13	40	1
Total		5

Ground Stone Artifacts

Steatite Beads

Seven steatite beads of 4 types were recovered from Burial B-9, 38 in., including three Type 4, two Type 5, one Type 6a, and one Type 9 bead.

Steatite Pipes

Four steatite pipes, all of Type 2, were recovered from the site.

Table 96
Steatite Pipes, Site 138

Burial No.	Depth in.	Length cm.	Exterior diameter cm.	Interior diameter cm.
B-8	32	14.5	3.0	2.5
B-8	32	15.0	4.0	3.0
B-9	38	3.6	2.5	1.9
-	no loc.	11.0	2.3	1.8

Steatite Bowls

Four steatite bowls were recovered from the site, 3 of them from Burial B-9.

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Table 97
Steatite Bowls, Site 138

Burial No.	Depth in.	Height cm.	Exterior diameter cm.	Bowl diameter cm.	Bowl Depth cm.
B-7	24	16.0	24.5	21.5	13.6
B-9	38	11.5	13.0	8.7	9.5
B-9	38	7.2	10.6	7.6	5.6
B-9	38	15.5	20.0	16.3	12.2

Miscellaneous Steatite Artifacts

This category includes a ground pebble from Burial E-5, 24 in., and five specimens from Burial B-8, 32 in. A conical fragment was recovered from Burial C-8, 36 in. A shallow bowl with an incised exterior surface and a teardrop-shaped cup were found in Pit B at an unspecified depth.

Pestles

Three pestles were recovered from the site, including a single Type 2 specimen from Burial C-9, 18 in., and two Type 6a specimens from Burial G-2, 32 in.

Doughnut Stones

Three doughnut stones were recovered from the site, one each from Burial C-9, 18 in., Burial C-2, 27 in., and Burial G-2, 32 in.

Miscellaneous Stone Artifacts

Sixteen modeled lumps of ocher (OL), 2 hammerstone, (HS) and six other indeterminate objects were recovered from the site.

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Table 98
Miscellaneous Ground Stones, Site 138

Pit or Burial	Depth in.	HS	OL	Indeterminate
D-3	12	-	1	-
K-1	18	-	2	-
E-5	24	-	-	1
B-1	30	-	1	-
B-17	30	-	2	-
C-14	30	2	1	-
B-8	32	-	1	-
G-2	32	-	1	1
G-8	34	-	1	1
H-2	34	-	1	-
C-8	36	-	-	1
C-12	36	-	-	1
B-2	38	-	3	-
B-9	38	-	-	2
C-13	40	-	1	-
B	no loc.	-	1	-
Total		2	16	6

Shell Artifacts

Shell Beads

A total of 1411 shell beads of 31 types was recovered from the site and is summarized in Table 99.

Shell Ornaments

A total of 166 *Haliotis* ornaments of 53 types was recovered from the site and is summarized in Table 100.

Shell Fishhooks

Eight shell fishhooks were recovered from the site, including 5 specimens of *Haliotis* and 3 of *Mytilus*.

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Table 99

Shell Bead Distribution, Site 138

Burial No.	Depth in.	Type 1a	1f	1h	2d	3a	3c	3d	3e	3f	3g	3i	4b	5a	5e	5f	7a	10a	10b
D-3	12	-	-	1	-	3	1	-	-	-	2	-	2	-	-	-	-	-	-
D-4	14	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-
C-9	18	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
K-1	18	-	-	-	-	-	9	-	-	22	-	-	-	-	-	1	-	-	-
E-2	24	-	-	-	-	-	-	-	-	-	39	-	-	-	-	-	-	-	-
B-4	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-2	27	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
B-1	30	-	-	-	-	-	-	7	-	-	85	-	-	-	-	-	-	-	-
B-17	30	4	-	7	-	-	-	-	-	-	159	-	-	1	-	-	-	-	-
G-1	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-8	32	11	6	2	18	-	-	-	-	-	-	-	-	1	-	-	-	-	-
G-2	32	-	-	-	1	-	2	-	-	13	333	1	-	3	2	2	-	-	-
G-8	34	-	-	-	-	-	-	-	-	-	155	-	-	-	-	-	-	-	-
H-2	34	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
C-12	36	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
B-9	38	1	-	-	-	12	-	-	14	-	108	-	-	2	-	-	1	7	1
C-13	40	-	-	-	-	3	-	-	-	-	56	-	-	92	-	-	-	17	-
G-5	no loc.	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-
Total		16	6	10	19	18	16	7	14	42	948	1	2	100	2	3	1	24	1

Burial No.	Depth in.	11a	11c	12a	16a	16b	16c	19a	19b	21a	21b	22a	23a	24a
D-3	12	-	-	-	-	-	-	-	-	-	-	-	-	-
D-4	14	-	-	-	-	-	-	-	-	-	1	-	-	-
C-9	18	-	-	-	-	-	-	-	-	-	-	-	-	-
K-1	18	9	-	-	-	4	-	-	-	5	17	2	-	-
E-2	24	-	-	-	-	-	-	-	-	-	-	-	-	-
B-4	27	1	-	-	-	-	-	-	-	-	-	-	-	-
C-2	27	-	-	-	-	-	-	-	-	-	-	-	-	-
B-1	30	-	-	-	-	-	-	-	-	-	-	-	-	-
B-17	30	-	-	-	-	-	1	-	-	2	-	2	-	-
G-1	30	-	-	-	-	-	-	-	-	-	-	2	-	-
B-8	32	-	-	-	-	-	1	-	-	1	-	-	1	-
G-2	32	-	1	3	1	5	-	1	-	-	2	1	-	-
G-8	34	-	-	-	-	-	-	-	1	-	-	-	-	1
H-2	34	-	-	-	-	-	-	-	-	-	-	-	-	-
C-12	36	-	-	-	4	-	55	-	-	-	-	1	-	-
B-9	38	4	-	1	-	-	-	3	-	3	-	1	-	-
C-13	40	4	-	2	2	-	18	-	-	-	5	-	-	-
G-5	no loc.	1	-	-	2	-	-	-	-	-	-	-	-	-
Total		19	1	6	9	9	75	4	1	11	25	9	1	1

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Table 100
Haliotis Ornaments, Site 138

Pit or Burial	Depth in.	Type C2	D6	E	E1	E3	E4	E4a	E4d	E9	E10	E10d	E12	Ga	H6	H6d	I	Id
D-3	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E-2	24	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
B-4	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-8	32	2	1	1	-	1	2	1	1	1	1	1	-	-	-	5	1	1
G-2	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-12	36	-	-	-	2	-	2	-	-	-	-	-	1	-	3	-	-	-
B-9	38	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-
B	no loc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		2	1	1	2	1	4	1	1	1	1	1	1	2	3	5	3	1

Pit or Burial	Depth in.	I1	I1a	I1d	I2d	I3	I3d	I4	I4a	I4d	I6	I7	I7ad	I8	I9	I9d
D-3	12	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E-2	24	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
B-4	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-8	32	6	1	3	1	-	1	2	1	1	1	-	1	-	5	4
G-2	32	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2
C-12	36	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
B-9	38	4	-	2	-	4	-	-	-	-	1	1	-	1	7	3
B	no loc.	4	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Total		15	1	5	1	4	1	4	1	2	3	1	1	1	14	9

Pit or Burial	Depth in.	I10d	I11a	J1	J1d	J2a	J2d	M	M1	M1d	M4	M4a	M4d	Od	O1	O2
D-3	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E-2	24	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
B-4	27	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-
B-8	32	1	-	4	1	1	1	16	5	4	1	-	1	-	-	1
G-2	32	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
C-12	36	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
B-9	38	-	-	-	-	-	-	-	1	1	-	1	-	-	1	-
B	no loc.	-	-	-	-	-	-	-	3	2	-	-	-	-	-	-
Total		1	1	4	1	1	1	17	10	8	2	1	1	1	1	1

Pit or Burial	Depth in.	O2a	O2d	O4	O7	O11	O11d	fragments
D-3	12	-	-	-	-	-	-	-
E-2	24	-	-	-	-	-	-	-
B-4	27	-	-	-	-	-	-	-
B-8	32	1	1	-	1	-	-	-
G-2	32	-	-	-	1	-	-	-
C-12	36	-	-	3	-	1	1	-
B-9	38	-	-	-	-	-	-	12
B	no loc.	-	-	-	-	-	-	-
Total		1	1	3	2	1	1	12

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Table 101
Shell Fishhooks, Site 138

Pit or Burial	Depth in.	Haliotis Type 2	Haliotis Type Fragment	Mytilus Type 2	Mytilus Type Fragment
E-2	24	-	-	-	1
B-8	32	1	-	-	-
H-2	34	-	-	-	1
C-12	36	1	1	-	-
E-3	no loc.	1	-	-	-
H-6	no loc.	-	-	1	-
B	no loc.	-	1	-	-
Total		3	2	1	2

Whole Shell Containers

All 14 specimens had traces of either ocher or asphaltum on their interior surfaces.

Table 102
Whole Shell Containers, Site 138

Pit or Burial	Depth in.	Haliotis	Tivela	Limpet
B-8	32	8	1	-
G-2	32	1	-	-
C-12	36	-	-	1
B-9	38	2	-	-
F	no loc.	1	-	-
Total		12	1	1

Miscellaneous Shell Artifacts

A rectangle of Tivela stultorum shell was recovered from Pit B at an unspecified depth. It had a adze-like blade. A turtle carapace pendant fragment was recovered from Pit B, also at an unspecified depth.

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Bone Artifacts

Bone Beads and Ornaments

A total of 32 bone beads and ornaments of 4 types were recovered from the site.

Table 103
Bone Beads and Ornament Types, Site 138

Burial No.	Depth in.	Type CC5	EE1a	EE1c	VV[1]
K-1	18	-	-	-	1
B-17	30	1	1	-	-
B-9	38	2	-	-	8
C-13	40	-	-	2	17
Total		3	1	2	26

Bone Fishhooks

Nine bone fishhooks of 2 types were recovered from the site.

Table 104
Bone Fishhook Distribution, Site 138

Burial No.	Depth in.	Type T1g	U3
C-9	18	2	-
B-17	30	3	1
C-14	30	1	-
B-8	32	2	-
Total		8	1

Bone Whistles

Six bone whistles, 5 of bird bone and 1 of mammal bone, were recovered from the site.

---

[1]Heizer and Hewes (1940) describe animal ceremonialism in Central California. The concentration of eagle claws in this site may indicate a similar practice. Perhaps the large number of claws were originally attached to a bird skin cape or they may have been strung as pendants on a necklace.

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Table 105
Bone Whistle Distribution, Site 138

Burial No.	Depth in.	Type FF1c	FF2
K-1	18	-	2
B-8	32	-	1
B-9	38	1	2
Total		1	5

Bone Awls

A total of 18 bone awls, including one of bird bone, 11 of whalebone, and 6 indeterminate fragments, were recovered from the site.

Table 106
Bone Awl Distribution, Site 138

Pit or Burial	Depth in.	Type 4aII	Baleen	Fragment
D-2	12	-	2	-
D-3	12	-	1	-
D-4	14	-	1	-
E-5	24	1	3	-
B-17	30	-	-	3
C-14	30	-	4	-
B-9	38	-	-	1
H-6	no loc.	-	-	1
F	no loc.	-	-	1
Total		1	11	6

Miscellaneous Bone Artifacts

Eight flakers, 3 cetacean vertebra mortars, 2 fish vertebra cups, and 4 miscellaneous artifacts were recovered from the site.

Table 107
Miscellaneous Bone Artifacts, Site 138

Pit or Burial	Depth in.	Type A2	C5	E2	BB2	CC5	K1
D-2	12	-	1	-	-	-	-
D-3	12	-	2	-	-	-	-
D-4	14	-	1	1	-	-	-
C-2	27	-	-	-	1	-	-
B-17	30	-	-	-	-	1	-

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Table 107 (continued)

B-8	32	2	-	-	-	-	-
C-8	36	-	-	-	1	-	-
B-9	38	-	2	-	-	1	-
E-3	no loc.	-	1	-	-	-	-
G-5	no loc.	-	-	-	1	-	-
B	no loc.	-	1	-	-	-	1
Total		2	8	1	3	2	1

Fibrous Materials

Cordage

Two specimens of 2-ply surf grass cordage were recovered respectively from Burial B-8, 32 in., and another unspecialized location. Both examples were twisted to the right. A third specimen of 3-strand surf grass braid was recovered from an unspecified location.

Pounded Plant Fiber

Three specimens of pounded bark fiber were recovered respectively from Burial K-1, 18 in., Burial B-8, 32 in., and an unspecified location. Three soaproot (Chlorogalum pomeridianum) fiber brushes were recovered from Burial B-9, 38 in. The fibers were folded in half and the folded end covered with asphaltum and inlaid rodent's teeth.

Basketry

Two fragments of coiled basketry were recovered respectively from Burial C-2, 27 in., and Burial B-9, 38 in. Both specimens were characterized by a single rod foundation and simple interlocking stitch. A 2-strand twined basket fragment was recovered from Burial B-17, 30 in.

Wooden Artifacts

Two canoe plank fragments with drilled holes and 2-ply cordage lashing were recovered respectively from Burial C-9, 18 in., and

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Burial C-8, 36 in. Three undecorated asphalted haft fragments were found with Burial B-17, 30 in., with an additional specimen which had been cord-wrapped. Two indeterminate wood fragments were found respectively with Burial B-8, 32 in., and Burial B-9, 38 in.

Miscellaneous Artifacts

Asphaltum

The uses of most of the 16 specimens recovered are identifiable from their context.

Table 108
Uses of Asphaltum, Site 138

Pit or Burial	Depth in.	Use
D-3	12	asphalt canoe plank plug
C-9	18	4 canoe plank plugs; 1 caulking strip
K-1	18	3 caulking strips; 2 with whole Olivella shell inlay
B-17	30	strip fragment with 1 whole Olivella shell
B-8	32	strip with whole impressed Olivella shells
B-9	38	strip with 3 rows of whole Olivella shells
B-9	38	mass of skirt weights attached to 2-ply fibers with a right hand twist
B-20	40	strip fragment; plain
A	no loc.	round ball; 2.5 cm. in diameter
A	no loc.	mass of skirt weights

Metal Objects

A copper knife handle with embossed lion figure was recovered from Burial K-1, 18 in. A copper spatulate object with blunt rounded end was found with Burial C-8, 36 in.

Glass Beads

A total of 912 glass trade beads was recovered from the site between 18 and 40 in.

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Table 109
Glass Bead Distribution, Site 138

Burial No.	Depth in.	No. of specimens
D-4	14	1
C-9	18	9
K-1	18	687
E-2	24	1
C-2	27	212
C-12	36	1
C-13	40	1
Total		912

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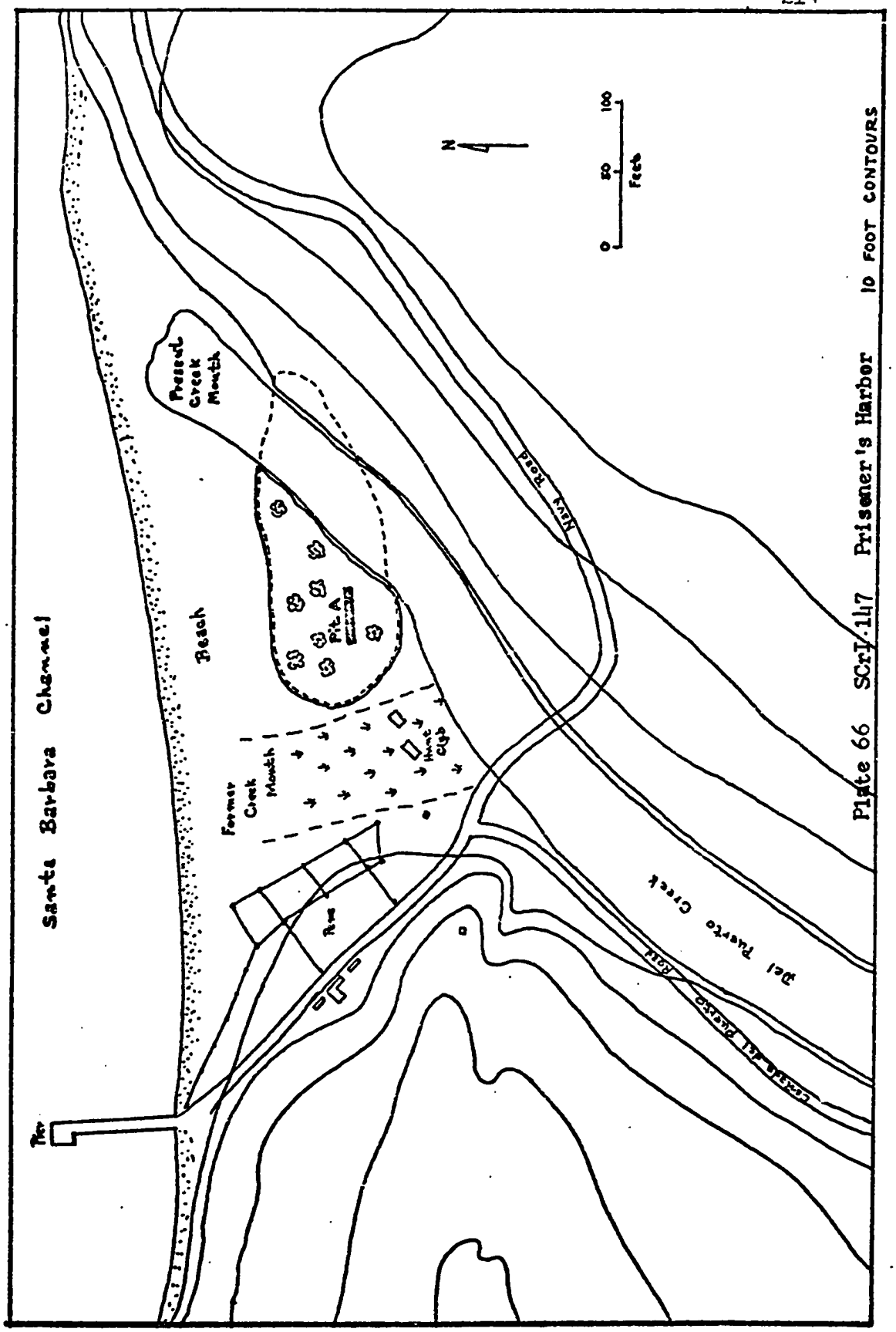

Plate 66 SCr-1147 Prisoner's Harbor 10 FOOT CONTOURS

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SCrI-147, Prisoner's Harbor

Site 147 is located at Prisoner's Harbor on the northern shore of Santa Cruz Island. It consists of a mound of shell midden soil, measuring roughly 400 ft. east to west, 150 ft. north to south, and 10 ft. high. The mound occupies the area between the present and former mouths of Del Puerto Creek and is covered with a number of Monterey Cypresses which were planted in historic times. The creek provides a year round supply of fresh water and is the best access to the island's central valley. About one-fifth of the site has been destroyed by stream erosion since the 1920's, when the creek was straightened artificially.

Stratigraphy

Olson excavated a single stratigraphic step trench (A), measuring 50 ft. east to west by 3 ft. north to south. The entire trench was excavated to a depth of 2 ft., the eastern 40 ft. of the trench were dug to a depth of 6 ft., and the easternmost 10 ft. were excavated to 14 ft. A test hole at the eastern extremity of the trench extended to a depth of 17 ft. 1 in. The total volume of excavated material amounted to 1,038.5 cubic ft.

The single stratigraphic section recorded by Olson shows alternating layers of ash and sandy midden soil to the maximum excavated depth. The total absence of burials and the high percentage of chipped chert artifacts indicate that the site was intensively used as a living and manufacturing location for the chert raw material of the nearby Montañon.

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Chipped Stone Artifacts

Projectile Points

A total of 52 projectile points of 8 types was recovered from the site.

Table 110
Projectile Point Distribution, Site 147

Depth in.	Type 1a	1b	1c	2a	2b	3	4b	5b	Unique	fragment
0-12	-	-	-	2	-	-	1	-	-	-
12-24	-	2	1	3	2	-	2	-	1	2
24-36	-	1	-	-	1	-	3	-	-	-
36-48	-	-	1	-	2	-	-	-	-	-
48-60	-	-	-	1	3	1	-	1	-	1
60-72	-	-	2	1	4	-	-	-	-	1
72-96	-	-	-	2	6	-	1	-	-	2
96-120	1	-	-	-	-	-	-	-	-	1
Total	1	3	4	9	18	1	7	1	1	7

Table 111
Projectile Point Material, Site 147

Type	Material Chert	Obsidian	Basalt	Jasper
1a	1	-	-	-
1b	3	-	-	-
1c	4	-	-	-
2a	9	-	-	-
2b	14	3	-	1
3	1	-	-	-
4b	5	1	1	-
5b	1	-	-	-
Unique	1	-	-	-
Fragment	7	-	-	-
Total	46	4	1	1

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Stone Drills

A total of 3,091 stone drills of 6 types was recovered from the site and represents specimens in all stages of manufacture. Most of the specimens were made of chert.

Table 112
Drill Distribution, Site 147

Depth in.	Type 1	2	3	4	5	6
surface	-	-	-	1	-	-
0-12	55	7	-	-	-	-
12-24	517	20	-	-	-	-
24-36	502	16	-	1	-	1
36-48	511	3	-	-	-	-
48-60	507	13	1	2	-	-
60-72	519	6	4	1	1	-
72-96	174	5	-	1	-	-
96-120	22	2	-	-	-	-
Total	3007	72	5	6	1	1

Scrapers

A total of 79 scrapers was recovered from the site.

Table 113
Scraper Distribution, Site 147

Depth in.	Type Core	Flake
0-12	-	2
12-24	2	18
24-36	6	2
36-48	1	4
48-60	2	7
60-72	-	-
72-96	1	9
96-120	-	10
120-144	4	10
144-168	1	-
Total	17	62

Ground Stone Artifacts

Steatite Beads

Two Type 4 steatite beads were recovered from Pit A, one between 36-48 in. and the other between 72-96 in. One Type 5 bead was recov-

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ered from the 24-36 in. level.

Mortars

Twelve mortars were recovered from the site, including one complete Type 7b specimen and 31 fragments of 11 other indeterminate specimens.

Table 114
Mortar Distribution, Site 147

Depth in.	Type 7b	Indeterminate
surface	1	-
0-12	-	1
12-24	-	1
24-36	-	4
36-48	-	2
48-60	-	2
60-72	-	1
Total	1	11

Pestles

Eight pestles of 2 types were recovered from the site.

Table 115
Pestle Distribution, Site 147

Depth in.	Type 2	6a	Fragments
0-12	-	-	1
48-60	2	-	1
60-72	1	-	-
144-168	1	1	1
Total	4	1	3

Doughnut Stones

Six doughnut stones were recovered from the site between 12 and 120 in,

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Table 116
Doughnut Stone Distribution, Site 147

Depth in.	No. of specimens
12-24	1
36-48	1
60-72	1
96-120	1
no loc.	2
Total	6

Miscellaneous Ground Stone Artifacts

A total of 29 hammerstones (HS), 7 abrading stones (AS), 25 grinding slabs (GS), 33 colored pebbles (CP), and 417 asphalted pebbles (AP) were recovered from the site.

Table 117
Miscellaneous Stone Artifacts, Site 147

Depth in.	HS	AS	GS	CP	AP	Indeterminate
surface	-	-	-	-	-	1
0-12	2	-	1	-	27	1
12-24	5	-	1	10	71	-
24-36	8	3	1	12	51	1
36-48	3	-	10	-	136	-
48-60	7	4	10	-	67	-
60-72	1	-	-	-	-	-
72-96	-	-	1	11	48	7
96-120	2	-	1	-	17	-
120-144	1	-	-	-	-	3
Total	29	7	25	33	417	13

Shell Artifacts

Shell Beads and Tubes

A total of 67 shell beads of 12 types was recovered from the site above 72 in.

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Table 118
Shell Bead Distribution, Site 147

Depth in.	Type 1d	1f	2a	2d	3c	3g	10a	11a	15a	17a	17b	19a	conch
0-12								1					
12-24	1	2		13								2	
24-36		2		9	4	2	1			3		6	1
36-48		5		1	2		1		1	1	1	2	
48-60		2		1								1	
60-72			1						1				
Total	1	11	1	24	6	2	2	1	2	4	1	11	1

Shell Ornaments

Two Type C1 Haliotis ornaments were found between 12 and 24 in.

Whole Haliotis Shell Containers

Fourteen whole Haliotis shell containers with siphonal holes plugged with asphaltum were recovered from the site.

Table 119
Haliotis Containers, Site 147

Depth in.	Species cracherodii	rufescens	indeterminate
0-12	1	-	-
12-24	3	1	-
36-48	-	-	5
48-60	-	-	4
Total	4	1	9

Modified Shell

Five genera of modified shell were recovered from the site.

Table 120
Worked Shell, Site 147

Depth in.	Genus Haliotis	Tivela	Mytilus	Olivella	Cypraea	Indeterminate
0-12	1	1	-	-	-	1
12-24	2	-	-	20	1	-
24-36	2	6	-	-	-	-
36-48	-	-	2	-	-	-
48-60	-	1	-	-	-	-
60-72	4	-	1	-	-	-
Total	9	8	3	20	1	1

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Bone Artifacts

Bone Beads

Twelve bone beads of 2 types were recovered from the site.

Table 121
Bone Bead Types, Site 147

Depth in.	Type EE1b	EE1c
0-12	-	2
12-24	1	-
24-36	2	1
36-48	1	2
48-60	-	3
Total	4	8

Bone Awls

Forty-eight bone awls of 10 types were recovered from the site.

Table 122
Bone Awls, Site 147

Depth in.	A1aII	A1bI	A1bII	A1aI	A2	A4aI	A4aII	A4bI	A4bII	A5b	Indeterminate
0-12	-	-	-	-	1	-	1	-	-	1	2
12-24	-	-	-	1	-	-	3	-	-	1	10
24-36	-	-	-	-	-	-	-	1	2	-	-
36-48	4	-	-	-	-	1	2	-	-	-	6
48-60	1	2	-	-	-	-	-	-	-	-	3
60-72	-	-	-	-	-	-	-	-	-	-	1
72-96	-	-	-	-	-	-	-	-	-	-	4
96-120	-	-	1	-	-	-	-	-	-	-	-
Total	5	2	1	1	1	1	6	1	2	2	26

Bone Fishhooks

Forty bone fishhooks of 2 types were recovered from the site.

Table 123
Bone Fishhooks Types, Site 147

Depth in.	Type T1g	U3
0-12	4	-
12-24	6	1
24-36	1	-
36-48	8	2
48-60	5	-
60-72	6	1

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72-96	4	1
96-120	2	-
Total	36	4

Miscellaneous Bone Artifacts

Thirteen types of miscellaneous bone artifacts were represented at the site.

Table 124
Miscellaneous Bone Artifacts, Site 147

Depth in.	Type C5	C6	E2	D6	P3a	Q3	Y	BB2	BB3	CC5	DD1	EE1a	HH	Indeterminate
0-12	1	-	2	-	-	-	-	-	-	-	-	-	-	-
12-24	-	-	-	-	-	-	-	1	-	3	-	-	1	2
24-36	-	-	-	-	-	-	1	-	1	-	-	-	-	-
48-60	2	1	-	-	-	2	-	-	-	-	-	-	-	-
60-72	1	-	-	-	1	-	-	-	-	-	-	-	-	-
72-96	-	-	-	-	-	-	-	-	-	-	-	1	-	-
96-120	-	-	-	-	-	-	-	-	-	-	-	-	-	2
144-168	-	-	-	2	-	-	-	-	-	-	-	-	-	-
no loc.	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Total	4	1	2	2	1	2	1	1	1	3	1	1	1	5

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SCrI-154, Orizaba

This site, one of several located in the rugged Orizaba region of Santa Cruz Island's almost inaccessible northern volcanic range, was not described by Olson in his field notes. It is located near Pictograph Cave, the only recorded site containing rock art on the island. The surface of the site is covered with annual grasses. Six test pits, labeled A-F, were dug. Pits A, B, C, D, and F contained cultural remains.

Burials

Five burials were recovered from the site between 6 and 36 in.

Table 125
Burial Tabulations, Site 154

Depth in.	Burial No.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
6	B-1	-	-	-	I		-	-
24	D-2	Fl	SE	Su	A		X	X
36	D-3	Fl	SE	Pr	A		X	X
no loc.	A-1	-	-	-	-		-	-
no loc.	A-2	-	-	-	-		-	-

Chipped Stone Artifacts

Miscellaneous Chipped Stone Tools

A chert flake scraper was recovered from the surface of the site. Olson found a core chopper, 3 core scrapers, and 2 Type 2 drills at unspecified locations. All specimens were made of chert.

Ground Stone Artifacts

Stone Beads

Two tubular magnesite beads both resembling a Type 5 steatite

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bead, were recovered respectively from Burial D-2, 24 in., and an unspecified location. They measure 3.9 by 1.6 cm. and 6.6 by 1.7 cm., respectively.

Miscellaneous Ground Stone Artifacts

Three indeterminate mortar fragments of lava were found at unspecified locations. Two grinding slabs from the site's surface, one hammerstone at 42 in., and a Type 1a pestle with 2 asphalted pebbles at unspecified depths were also recovered.

Shell Artifacts

Shell Beads

Olson recovered 26 Type 1j beads and 1 Type 25a bead, all from an unspecified location.

Whole Haliotis Container

A single whole H. cracherodii shell was recovered from Burial B-1 at 6 in.

Bone Artifacts

Miscellaneous Specimens

A single Type CC3 sea mammal vertebra spool with a groove around the circumference of one end was recovered from an unspecified location. It has traces of asphalt on the surface, bears red ocher stains, and is 3.6 cm. long by 3.0 wide.

A single Type Z1 conical whalebone tool with an ovoid cross-section was recovered from an unspecified location. It is 20.0 cm. long, 3.7 cm. wide, and 2.3 cm. thick.

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SCrI-159, Orizaba

Site 159, another without descriptive data, is located in the Orizaba area of northern Santa Cruz Island. Seven pits, lettered A-G, were dug to varying depths to a maximum of 54 in.

Burials

The expedition recovered 19 burial groups from Pit B-G, between 12 and 54 in. Burial posture and orientation varied greatly.

Table 126
Burial Tabulations, Site 159

Burial No.	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
B-1	12	-	-	-	A		X	-
C-1	14	-	-	-	A		X	-
D-1	24	-	-	-	A		X	-
G-1	24	-	-	-	A		X	-
E-1	32	LF	S	LS	A		X	-
E-2	32	Fl	N	RS	A		X	-
E-3	32	Fl	NW	LS	A		X	X
F-1	36	Fl	S	LS	A		X	-
F-2	36	Fl	S	Su	Y		X	-
D-2	42	LF	N	Su	A		X	-
D-3	42	Ex	SW	LS	A		-	-
D-4	42	Ex	N	Su	A		X	X
D-5	42	Ex	NE	Su	I		X	X
D-6	42	LF	S	Su	A		X	-
E-4	46	Fl	N	-	A		X	X
F-4	48	Fl	NW	LS	A		-	-
D-7	54	Fl	E	Su	A		X	X
D-8	54	-	N	-	I		X	X
F-3	54	Fl	SW	sitting	A	M	X	-

Chipped Stone Artifacts

Projectile Points

Seven projectile points of black chert were recovered from the site. Three types were represented.

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Table 127
Projectile Point Distribution, Site 159

Burial No.	Depth in.	Type 1b	1c	5e	Unique	Fragment
-	surface	-	-	-	1	2
D-2	42	-	2	1	-	-
D-7	54	1	-	-	-	-
Total		1	2	1	1	2

Scrapers

Olson recovered 16 flake scrapers and 5 core scrapers from the site. All specimens were made of chert, with the exception of the flake scrapers of sedimentary stone from Burials F-1 and D-4.

Table 128
Scraper Distribution, Site 159

Pit or Burial	Depth in.	Type Core	Flake
-	surface	5	11
A	12-24	-	1
F-1	36	-	1
D-4	42	-	1
D-7	54	-	2
Total		5	16

Pick

A single core pick of quartzite was recovered from Pit A, 6-48 in.

Ground Stone Artifacts

Steatite Pipe

A Type 2 pipe of brown steatite was recovered from Burial D-2, 42 in., and is 8.7 cm. long, 3.4 cm. wide, and has a bowl diameter of 2.5 cm. There are traces of asphaltum around the mouth end.

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Mortars

A Type 1 mortar was collected from the surface of the site, and a Type 3 mortar was recovered from Burial C-1, 14 in. Both specimens were made of lava.

Pestles

Nine pestles, probably all of Type 2, were recovered from the site.

Table 129
Pestle Distribution, Site 159

Burial No.	Depth in.	Type 2	Indeterminate
-	surface	1	-
D-1	24	-	1
D-2	42	1	-
D-4	42	3	-
E-4	46	1	-
D-8	54	1	-
E-3	54	1	-
Total		8	1

Charmstones

Three charmstones were recovered from the site. One specimen, from Burial D-2, 42 in., is 8.2 cm. long, 3.5 cm. in diameter, and has 2 parallel grooves around one battered end. The other two specimens were recovered from Burial D-4, 42 in. One was an elongated plummet with a groove around the larger end and is 15.0 cm. long and 2.7 cm. in diameter. The other specimen was cigar-shaped with one groove around each end and is 10.0 long and 2.8 cm. in diameter.

Doughnut Stones

Three doughnut stones were recovered from the site, one each from Burials D-1, 24 in., D-6, 42 in., and D-8, 54 in.

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Miscellaneous Ground Stone Artifacts

A total of 4 hammerstones (HS), 5 abrading stones (AS), 3 ocher lumps (OH), 4 asphalted pebbles (AP), and 9 indeterminate objects were recovered from the site.

Table 130
Miscellaneous Ground Stones, Site 159

Pit or Burial	Depth in.	HS	AS	OH	AP	Indeterminate
surface	-	-	1	-	-	1
B-1	12	-	-	-	-	2
C-1	14	-	1	-	-	-
D-1	24	2	-	-	-	-
G-1	24	2	-	-	-	-
A	24-36	-	-	-	-	3
E-1	32	-	-	-	2	1
E-2	32	-	-	-	2	-
E-3	32	-	-	-	-	1
A	36-48	-	1	-	-	-
D-2	42	-	1	-	-	-
D-4	42	-	1	-	-	1
D-7	54	-	-	3	-	-
Total		4	5	3	4	9

Shell Artifacts

Shell Ornaments

Two Type 02 clam shell ornaments were recovered from Burial D-8, 54 in. They measure 3.2 by 2.8 cm. and 2.8 by 2.5 cm.

Whole Shell Containers

Five whole shell containers were recovered from the site and had traces of ocher or asphaltum on their interior surfaces.

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Table 131
Shell Containers, Site 159

Burial No.	Depth in.	Haliotis cracherodii	Haliotis rufescens	Limpet
D-2	42	1	-	-
D-6	42	-	1	-
D-8	54	1	-	2
Total		2	1	2

Bone Artifacts

Bird Bone Beads and Tubes

Two Type EE1a bead specimens were found with Burial B-1, 12 in. and were 4.2 and 6.6 cm. long. Two additional Type EE1a tube fragments were recovered from Burial E-4, 46 in.

Bone Fishhooks

Three bone fishhooks of 2 types were recovered from the site.

Table 132
Bone Fishhooks, Site 159

Burial No.	Depth in.	Type T1g	Type U3
-	surface	-	1
D-1	24	1	-
G-1	24	1	-
Total		2	1

Miscellaneous Bone Artifacts

Two bird bone awls, 2 whalebone flakers, a spatulate whale object, 2 undecorated atlatl hooks, and an indeterminate object were recovered from the site.

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Table 133
Miscellaneous Bone Artifacts, Site 159

Burial No.	Depth in.	A4aI	C6	E2	QQ1	Indeterminate
E-1	32	-	-	-	-	1
F-1	36	1	-	-	-	-
D-4	42	-	-	-	2	-
D-5	42	-	1	-	-	-
D-7	54	-	-	1	-	-
D-8	54	1	-	-	-	-
F-3	54	-	1	-	-	-
Total		2	2	1	2	1

Fibrous Materials

Wood Fragments

Five specimens of wood were recovered from Burial F-1, 36 in., but are to fragmentary to determine use. There is no evidence of drilling or asphalt.

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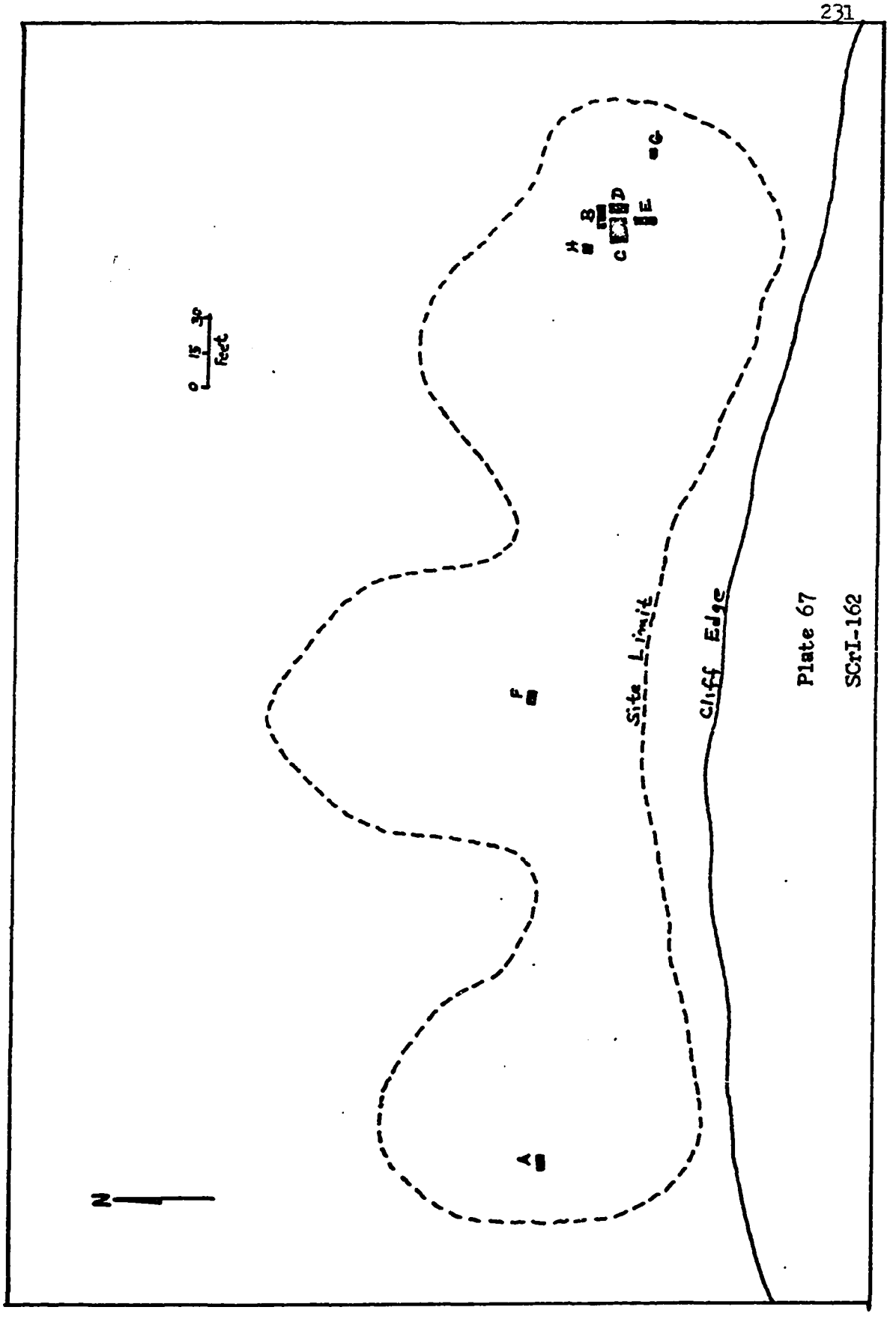

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SCrI-162, Orizaba

Site 162, a third site without descriptive data in the Orizaba region, was visited by the University group in 1927. Olson did not describe the site in his field notes. Eight pits, lettered A-H, were dug from the surface to a maximum depth of 69 in.

Burials

A total of 27 burials were recovered from the site. They were primarily in supine flexed position.

Table 134
Burial Tabulations, Site 162

Burial No.	Depth in.	Posture	Orientation	Position	Age	Sex	Artifacts	Ocher
B-2	9	-	NE	-	A		X	-
B-1	12	-	W	-	I		X	X
F-1	12	-	-	-	A		X	-
C-1	14	Fl	W	Pr	A		X	-
D-1	14	Fl	N	LS	A		X	-
B-4	16	Fl	N	LS	A		X	-
B-9	18	LF	SW	Su	A		X	-
B-6	20	Ex	NW	Su	A		X	-
C-3	20	Fl	E	Su	A		X	X
A-1	24	Fl	E	RS	A		X	-
B-3	24	Fl	SW	LS	A		X	-
B-8	24	Ex	W	Su	C	M	X	-
C-2	24	-	-	-	C		X	-
C-4	24	Fl	SW	LS	A		X	X
D-2	27	-	-	-	A		X	-
B-5	30	LF	E	Su	A		X	X
B-7	30	Ex	W	Su	Y		X	X
C-5	30	Fl	W	Pr	A		X	-
C-6	30	-	N	Su	A		X	-
C-7	34	LF	N	LS	A		X	X
E-1	34	Fl	NW	RS	A		X	-
E-2	34	-	S	Pr	A	F	-	-
E-3	34	Fl	N	LS	A		X	-
E-4	36	Fl	NE	LS	A		X	-
E-5	36	-	SW	LS	A		X	-
G-1	54	-	-	-	A		-	-
H-1	69	-	-	-	A		-	-

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Chipped Stone Artifacts

Projectile Points

Two projectile points were recovered from the site, one Type 6b specimen from Pit A, 12 in., and one unique specimen from Burial C-5, 30 in.

Drills

Two Type 1 chert drills were recovered from the site, one from Burial B-4, 24 in., and one from Burial C-6, 30 in.

Flake Scrapers

Two chert flake scrapers were recovered, one from Burial B-4, 16 in., and one from Burial B-3, 24 in.

Core Choppers

Two quartzite core choppers were found with Burial G-1, 54 in.

Ground Stone Artifacts

Steatite Beads

Six Type 2a steatite beads were found with Burial B-1, 12 in., 3 of which measure 8 by .3 cm. and 3 of which are 1.8 by 1.0 cm. An additional Type 2a steatite bead was recovered with Burial B-9, 18 in.

Steatite Pipe

A single Type 1 steatite pipe was recovered from Burial B-5, 30 in., and measures 8.7 by 2.6 cm. with traces of asphaltum at one end.

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Mortars

Fragments of 5 mortars were recovered from the site, all of indeterminate type. They were found with Burials B-1, 12 in., B-3, 24 in., D-2, 27 in., and B-5, 30 in.

Pestles

Ten pestles of 3 types were recovered from the site.

Table 135
Pestle Distribution, Site 162

Pit or Burial	Depth in.	Type 1a	1b	3	fragment
D-1	14	-	-	-	1
C-3	20	1	-	-	-
B-3	24	-	-	1	-
B-8	24	1	-	-	-
A	27	-	1	-	-
D-2	27	-	-	-	1
C-6	30	-	-	-	1
G-1	54	-	-	-	2
H-1	69	1	-	-	-
Total		3	1	1	5

Doughnut Stones

A total of 14 doughnut stones were recovered from the site between 12 and 69 in.

Table 136
Doughnut Stone Distribution, Site 162

Burial No.	Depth in.	No. of specimens
F-1	12	1
B-9	18	2
C-3	20	1
B-8	24	4
C-6	30	3
C-7	34	2
H-1	69	1
Total		14

Miscellaneous Ground Stone Artifacts

One hammerstone (HS), 36 asphalted pebbles (AP), 3 modeled ocher

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lumps (OH), and one randomly incised sandstone block (IS) were recovered from the site. The incised stone may have been a grave marker.

Table 137
Miscellaneous Stone Artifacts, Site 162

Burial No.	Depth in.	HS	AP	OH	IS
B-1	12	-	2	-	-
E-1	12	-	-	-	1
D-1	14	-	13	-	-
C-3	20	-	2	-	-
B-3	24	-	1	-	-
B-8	24	1	9	-	-
C-4	24	-	1	3	-
E-1	30	-	2	-	-
E-5	36	-	4	-	-
G-1	54	-	2	-	-
Total		1	36	3	1

Shell Artifacts

Shell Beads and Tubes

A total of 690 shell beads of 9 types were recovered from the site between 12 and 34 in.

Table 138
Shell Bead Distribution, Site 162

Burial No.	Depth in.	Type 1f	1j	10a	10b	23a	25a	30	32	35
B-1	12	2	-	-	6	-	-	-	-	-
C-1	14	1	-	-	6	-	-	-	-	-
D-1	14	-	-	-	1	-	-	-	-	-
B-9	18	4	-	-	14	-	-	-	-	-
B-6	20	4	6	-	3	-	-	18	39	-
C-3	20	20	-	-	-	-	-	-	-	-
B-8	24	1	-	1	-	-	2	-	-	-
C-4	24	2	-	-	2	-	-	-	-	-
B-5	30	9	-	-	20	-	-	-	-	-
B-7	30	143	-	-	-	-	-	-	-	-
C-5	30	-	1	-	-	-	1	-	-	-

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Table 138 (continued)

C-6	30	-	-	-	-	-	9	-	-	-
C-7	34	-	111	1	-	-	1	-	-	-
E-3	34	-	239	12	-	4	-	-	-	2
E-5	34	-	-	-	6	-	-	-	-	-
Total		186	356	14	57	4	13	18	39	2

Haliotis Ornaments

Two Haliotis ornaments were recovered from the site, a Type E3a specimen from Burial C-4, 24 in., and a Type C19 specimen from Burial E-3, 34 in.

Whole Haliotis Shell Containers

Seventeen Haliotis shells were recovered from the site and were coated with asphaltum on their inner surfaces.

Table 139
Haliotis Containers, Site 162

Burial No.	Depth in.	Haliotis cracherodii	Haliotis rufescens
B-9	18	3	-
C-3	20	5	-
B-8	24	2	2
C-6	30	2	-
C-7	34	3	-
Total		15	2

Bone Artifacts

Miscellaneous Bone Artifacts

Five bone awl fragments and a blunt whalebone object, 15.7 cm. long, 3.2 cm. in diameter, and with an ovoid cross-section were recovered from the site.

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Table 140
Miscellaneous Bone Artifacts, Site 162

Burial No.	Depth in.	Awl fragments	Whalebone object
C-4	24	1	-
B-5	30	1	-
C-7	34	3	-
E-4	36	-	1
Total		5	1

Basketry

Twined Basket Impressions

This specimen of a twined basket impression in asphalt was recovered from Burial B-9, 18 in.

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Conclusions

This chapter is divided into four sections. A brief summary of the island sites is followed by a chronological ordering of cultural phases. These phases are then compared with other proposed sequences of the Santa Barbara Channel region. Finally, the sequence is related to cultural development in other areas of central and southern California.

Summary of Sites

SCrI-3 is a habitation and burial site, with a cultural deposit extending to a depth of 63 in. Two distinct components were represented in the excavated material, one of early and one of intermediate prehistoric times. The early occupation, SCrI-3A, was apparent in Pits C and P below 32 and 30 in., respectively. At least 12 burials were extended in supine position, oriented to the east, and furnished with powdered ocher. Type 1 steatite beads, whole Haliotis cracherodii containers, and Haliotis ornaments of Classes C, E, and F were present. Doughnut stones, rare stone mortars, and wicker and twined baskets were present.

The intermediate occupation of Site 3, SCrI-3B, was characterized by burials flexed on one side or supine with red ocher. Body orientation was usually toward the east. Types 5c, 6a, and 8a projectile points were unique to the site at this time. Steatite was utilized in the manufacture of Type 1 beads, Type 1 pipes, and bowls. Types 1a and 8a mortars and Type 2 pestles were the most common examples of their classes. Shell bead Types 1f, 1j, and 6a were most numerous, and Types 11, 4c, 20, 25b, 30, and 32 were unique to this island site.

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Table 141

Shell Bead Frequencies from Santa Cruz Island Sites

Site SCrI-	Type 1a	1b	1c	1d	1e	1f	1h	1j	1k	1l	2a	2c	2d	3a	3b	3c	3d	3e	3f	3g	3h	3i	4a	4b
138	16	-	-	-	-	6	10	-	-	-	-	-	19	18	-	16	7	14	42	948	-	1	-	2
147	-	-	-	1	-	11	-	-	-	-	1	-	24	-	-	6	-	-	-	2	-	-	-	-
103	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	1	1	7	-	-	51	-	1417	3	-	657	1	-	-	501	2079	-	-	4568	3892	2	377	-	-
82	7	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	-	-	-	-	-	9	-	-	-	-	-	-	-	-	16	-	-	-	-	476	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	1	-	-	1	917	-	8829	-	6	-	-	-	-	-	-	-	-	-	-	-	-	618	-
162	-	-	-	-	-	186	-	356	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
154	-	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	24	2	7	1	1	1196	10	10628	3	6	658	1	43	18	517	2101	7	14	4610	5318	2	378	618	2

Site SCrI-	Type 5a	5c	5d	5e	5f	6a	6b	6c	7a	7b	8	9a	9b	10a	10b	11a	11b	11c	12a	13b	14	15a	15b	16a	16b	16c
138	100	-	-	2	3	-	-	-	1	-	-	-	-	24	1	19	-	1	6	-	-	-	-	9	9	85
147	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-	2	-	-	-	-
103	-	-	-	-	-	12	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-
104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	77	-	15	1	-	1	-	-112	5	12	2	1	177	-	108	46	-	-	3	47	86	12	3	-	-
82	-	7	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
135	-	-	-	-	4	-	-	-	22	5	9	-	-	197	-	49	14	-	5	-	-	-	-	2	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	1915	3	21	-	-	-	-	-	149	584	-	-	-	-	-	-	-	-	-	-	-
162	-	-	-	-	-	-	-	-	-	-	-	-	-	15	57	-	-	-	-	-	-	-	-	-	-	-
154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Total	177	7	15	3	7	1929	3	21133	10	21	2	1	565	650	178	60	1	11	3	47	88	12	14	9	85	

Table 141(continued)

Site Scri-	17a	17b	17c	18a	18b	19a	19b	20	21a	21b	22a	Type 23a	23b	24a	24b	25a	25b	26a	26b	28	29b	30	32	35	36
138	-	-	-	-	-	4	-	-	11	25	9	1	-	1	-	-	-	-	-	-	-	-	-	-	-
147	4	1	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
100	1	-	1	-	40	553	-	-	1	2	-	671	5	5	7	3	-	-	5	1	8	-	-	9	1
82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	-	-	-	-	-	-	1	-	1	41	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	44	-	-	-	30	-	-	-	101	-	-	-	51	21	2	-	-	-	-	-	4	3
162	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	13	-	-	-	-	-	18	39	2	-
154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-	284	-	-	-	-	-	-	-	-	-	-	-	-
Total	7	1	1	44	40	568	1	30	13	68	10	777	289	6	7	68	21	3	5	1	8	18	39	15	4

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Circular, square, and oval Haliotis ornaments were present, some with edge incision. Whole containers of Haliotis cracherodii, bone gorges, awls, punctate tubular beads, and cetacean mortars indicate an intensive exploitation of the marine environment.

SCrI-39 was a small late prehistoric single-component shell midden and cemetery site, which extended to a depth of 21 in. Burials were flexed in prone position and oriented to the west. The mortuary complex and the presence of fragments of surf grass matting indicate a late prehistoric age.

SCrI-81 was both a habitation and cemetery site of the intermediate prehistoric period, with burials flexed on the right side toward the east. As with Site 39, the amount of recovered artifacts was small and not diagnostic, but the presence of matting would indicate a relatively late age.

SCrI-82 was a late prehistoric habitation, burial, and industrial site. Burials were flexed in prone position to the west. The large concentration of tiny Type 1 chert drills may have been used to manufacture shell beads. Shell beads of Type 1a, 1f, 5c, and 11a were present. Circular Haliotis ornaments, some with edge incision, were manufactured. The population also used twined and wicker baskets.

SCrI-83 was both a village and cemetery site, the only one of Olson's sites to contain evidence for three successive occupations. The earlier occupation, SCrI-83A, was represented by at least 8 burials from the lower parts of Pits K, L, X, and EE. Bodies were extended in supine position and were oriented toward the south. A large number of Type 23b shell beads were recovered.

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Table 142

Haliotis Ornament Frequencies from Santa Cruz Island Sites

Site SCrI-	Type B4	B4aa	C	Ca	Cb	Caaf	C1	C1a	C1b	C1f	C1j	C2	C2bb	C4aa	C5	C5g	C5i	C6	C6bb	C7a	C7aa	C8	C19	D6	D6a	D6d
138	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-
147	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	2	1	-	1	1	1	4	-	1	-	-	3	3	2	5	2	1	1	1	1	1	-	4	4	2
82	-	-	-	-	-	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	2	-	-	-	-	-	-	-	-	4	-	-	16	5	-	-	-	-	-	-	-	-	-	-
162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	-	-	-	-	-	-	2	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2	1	2	1	1	1	9	2	1	1	3	9	3	2	21	7	1	1	1	1	1	1	5	4	2

Site SCrI-	Type D8d	E	Ea	E1	E1a	E1f	E2aa	E3	E3a	E3f	E4	E4a	E4d	E5	E9	E9a	E9aa	E10	E10a	E10d	E10aa	E12	E12aa	E15
138	-	1	-	2	-	-	-	1	-	-	4	1	1	-	1	-	-	1	-	1	-	1	-	-
147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	1	22	5	33	6	-	1	2	-	-	12	1	-	1	2	1	1	3	2	-	3	1	1	1
82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
3	-	2	-	-	-	1	-	3	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
162	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	1	25	5	36	6	1	1	6	1	12	16	2	1	1	3	1	1	5	2	1	3	2	1	1

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Table 142 (continued)

Site SCrI-	Type F1	F1a	F1g	F3	F3f	F6	G	Ga	Gaa	G2	G2a	G2b	G2aa	G2bb	G6	G6a	G6aa	G8a	G8aa	H6	H6d	I	Id	I1	I1a	I1d
138	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	3	5	3	1	15	1	5
147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	4	2	2	-	-	1	3	-	-	21	4	1	10	4	-	2	1	2	1	-	-	12	-	40	-	-
82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	-	-	-	-	-	-	1	7	11	-	-	-	-	-	1	-	-	-	-	-	-	-	-	7	-	-
3	-	-	-	9	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	4	2	2	9	1	1	4	9	11	21	4	1	10	4	1	2	1	2	1	3	5	15	1	62	1	5

Site SCrI-	Type I1g	I2	I2d	I3	I3d	I4	I4a	I4d	I5	I6	I6aa	I7	I7aa	I7ad	I8	I8a	I9	I9d	I9g	I10d	I11	I11a	I11g	I11aa
138	-	-	1	4	1	4	1	2	-	3	-	1	-	1	1	-	14	9	-	1	-	1	-	-
147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	2	-	-	1	-	8	1	-	2	-	-	1	1	-	-	2	6	-	-	-	-	-	1	1
82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	-	1	-	-	-	3	-	-	-	5	1	3	1	-	-	-	7	-	1	-	4	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2	1	1	5	1	15	2	2	2	8	1	5	2	1	1	2	27	9	1	1	4	1	1	1

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Table 142 (continued)

Site SCrI-	Type I12	I16	J1	J1a	J1d	J1aa	J2a	J2d	J4	M	M1	M1d	M4	M4a	M4d	N1	N4	N6	N6aa	O	Od	O1	O2	O2a	O2d	O3	O3g
138	-	-	4	-	1	-	1	1	-	17	10	8	2	1	1	-	-	-	-	-	1	1	1	1	1	-	-
147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	-	-	11	1	-	1	-	-	3	-	1	-	-	-	-	11	5	2	1	3	-	5	1	-	-	-	-
82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	1	1	1	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	2
162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	1	1	16	1	1	1	1	1	3	18	14	8	2	1	1	11	5	2	1	4	1	6	3	1	1	1	2

Site SCrI-	Type O4	O4aa	O5	O5i	O7	O7aa	O8a	O8aa	O11	O11d	O11aa	O12aa	O14	P	P1	fragments
138	3	-	-	-	2	-	-	-	1	1	-	-	-	-	-	12
147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	14	1	3	2	3	4	1	1	1	-	2	1	1	8	-	73
82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Total	17	1	3	2	5	4	1	1	2	1	2	1	1	8	3	95

The intermediate occupation, SCrI-83B, was represented by flexed supine burials oriented in various directions. The use of powdered ocher declined. Type 2 pestles, rare mortars of several types, and an elaborated punctate clam shell and bone industry were distinctive features of this period.

The late occupation, SCrI-83C, was characterized by typical late prehistoric burials above 50 in. flexed in prone position to the northwest. Objects of steatite, mortar and pestle types, and bone tools proliferated.

SCrI-100 represented a major village and cemetery site of the late prehistoric period. The midden deposit extended to 78 in. Burials were flexed to the northwest in prone position or on one side. Ocher was rarely sprinkled on the bodies. There was a high percentage of Type 4b and 5a projectile points and Type 1 chert drills. Steatite was commonly used for a variety of pipe types, bowls, effigies, and pendants. A wide variety of Haliotis ornaments of classes C, E, G, I, and O, Type 1 and 2 shell fishhooks, and H. cracherodii containers were present. There were large numbers of asphalted pebbles at the site. The bone industry of Site 100 included Types CC5, EE1b, and EE1c Beads, gorges, whistles, and flutes. Type A4aI awls, Type C5 flakers, and Type D1 wedges were also present. Actual specimens of twined and coiled basketry and matting were recovered. The presence of preserved canoe planks indicates an intense use of maritime resources for food and raw materials.

SCrI-103 was a habitation and cemetery site of intermediate prehistoric times containing flexed burials oriented to the north and in

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Table 143
Projectile Point Frequencies from Santa Cruz Island Sites

Site SCrI-	Type 1a	1b	1c	2a	2b	3	4b	5a	5b	5c	5e	6a	6b	6c	8a	fragments
138	1	-	-	4	2	-	6	-	-	-	-	-	-	-	-	4
147	1	3	4	9	18	1	7	-	1	-	-	-	-	-	-	7
104	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
100	-	6	3	2	9	4	11	14	1	-	5	-	9	-	-	23
159	-	1	2	-	-	-	-	-	-	-	1	-	-	-	-	2
131	-	-	2	-	1	-	-	-	-	-	-	-	-	-	-	1
135	-	-	1	2	1	-	1	-	-	-	-	-	-	-	-	2
39	-	-	-	-	1	-	-	-	-	-	-	-	-	2	-	-
3	-	-	1	-	-	-	-	1	-	1	-	2	-	-	1	2
162	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Total	2	10	13	17	32	5	25	15	2	1	6	2	11	2	1	41

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supine position or on one side. Steatite was utilized for beads. Shell beads of Types 1f, 6a, 10b were present. A circular Haliotis ornament, bone awls, and a composite fishhook barb were also found.

SCrI-104 was an occupation site from which only a small collection was recovered. A single Type 6b projectile point, Types 17a and 26a shell beads, Type 2 shell fishhooks and Type D6 wedges were found.

Site 122 included both a late prehistoric village and a cemetery with burials flexed in prone position toward the west. Flake scrapers, a steatite bowl, Type 1a and 2 pestles, and many asphalted pebbles, were recovered from the site. Haliotis rufescens containers were also present.

Site 131 contained a late prehistoric occupation midden and cemetery with burials flexed to the west in prone position. Types 1c and 2b projectile points, chert flake scrapers and flakes, asphalted pebbles, and baleen awls were recovered from the site.

Site 135 was a late prehistoric village and cemetery site containing flexed burials oriented in various directions in prone or side position. Type 1c, 2a, 2b, and 4 projectile points, and Type 1 drills were present. Shell bead types included 3b, 3g, 5f, 7a, 7b, 8, 11a, 11b, 12a, 16a, 21a, 21b, and 22a. Haliotis ornaments included specimens in Classes E, G, I, J, M, O, and P. The presence of perishable objects, such as bark and hair, combined with the absence of artifacts of European manufacture, implies a late prehistoric age for the site.

Site 138 was a large protohistoric occupation and cemetery site. Burials were flexed in prone position and were oriented to the north

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or west. Type 1c, 2a, 2b, and 4b projectile points and many Type 1 drills were recovered. Steatite beads, Type 2 pipes, and bowls were also found. Types 19a, 21a, 21b, 22a, 24a, 3c, 3f, 3g, 3i, 5a, 11a, 11b, 15a, and 16a shell beads were recovered and indicate a recent age. Haliotis ornaments, especially in Classes E, I, M, and O, revealed a great deal of variation. Type 2 shell fishhooks, bone gorges, and bone beads of Types CC5, EE1a, and EE1c were present. Coiled basketry, cordage, and two canoe planks were well-preserved. The presence of glass trade beads and metal objects clearly indicates a protohistoric date.

SCrI-147 was a late prehistoric occupation and manufacturing site extending to an unusual depth of 168 in. Point types 1a, 1b, 1c, 2a, 2b, 3, 4b, and 5 b were recovered from the site, as were a large number of Type 1 drills and scrapers. Pestles of Type 2 and 6a and numerous asphalted pebbles were found. Shell bead types included 2a, 2d, 3c, 3g, 15a, 17a, and 19a. Bone bead types EE1b and EE1c, bone awls of various types, and bone gorges were also recovered.

SCrI-154 was an intermediate prehistoric habitation and cemetery site containing burials flexed to the southeast in various positions with ocher. The collection from the site is small, but includes Type 1j and 25a shell beads.

SCrI-159 included an intermediate prehistoric habitation site and cemetery containing flexed burials oriented in various directions in supine or left side position. Types 1b, 1c, and 5e projectile points were represented, and a Type 2 steatite pipe was present. Most pestles were of Type 2. Two Type 02 clam shell ornaments,

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bird bone beads and tubes, and bone gorges were also found.

SCrI-162 was a habitation and cemetery site with two occupations represented. The earliest stage was represented in Pit B by three extended supine burials oriented toward the west. There was a Type 1a mortar and bead Types 1f, 1j, 10a, 10b and 25a. A twined basket impression was also recovered. The later occupation included flexed supine burials oriented in various directions.

The Sequence

Of all the methods of archaeological dating, that based on morphological age is the least satisfactory. One must first establish a sequence of morphological changes through time and then determine which ends of the sequence are earliest and latest in time. The result is a Relative 4 date, in Oakley's (1964, 4) terminology. Stratigraphic position and stylistic change were the tools provided me by the University party of 1927-28 for analysis of the collection, as those were the methods available at the time.

Researchers in the Santa Barbara Channel region have noted for nearly fifty years that a mortuary complex based on supine extended burials preceded the later practice of flexure on the mainland. A limited number of extended burials in prone position with powdered red ocher were recovered from the lowest parts of Sites 3, 83, and 162. They were oriented variously to the east, south, and west, there being little variation within single sites.

The burials were associated with shell beads of Types 1f, 1j, 4a, 6a, 10a, 10b, 23a, and 25a. Haliotis ornaments of circular, square,

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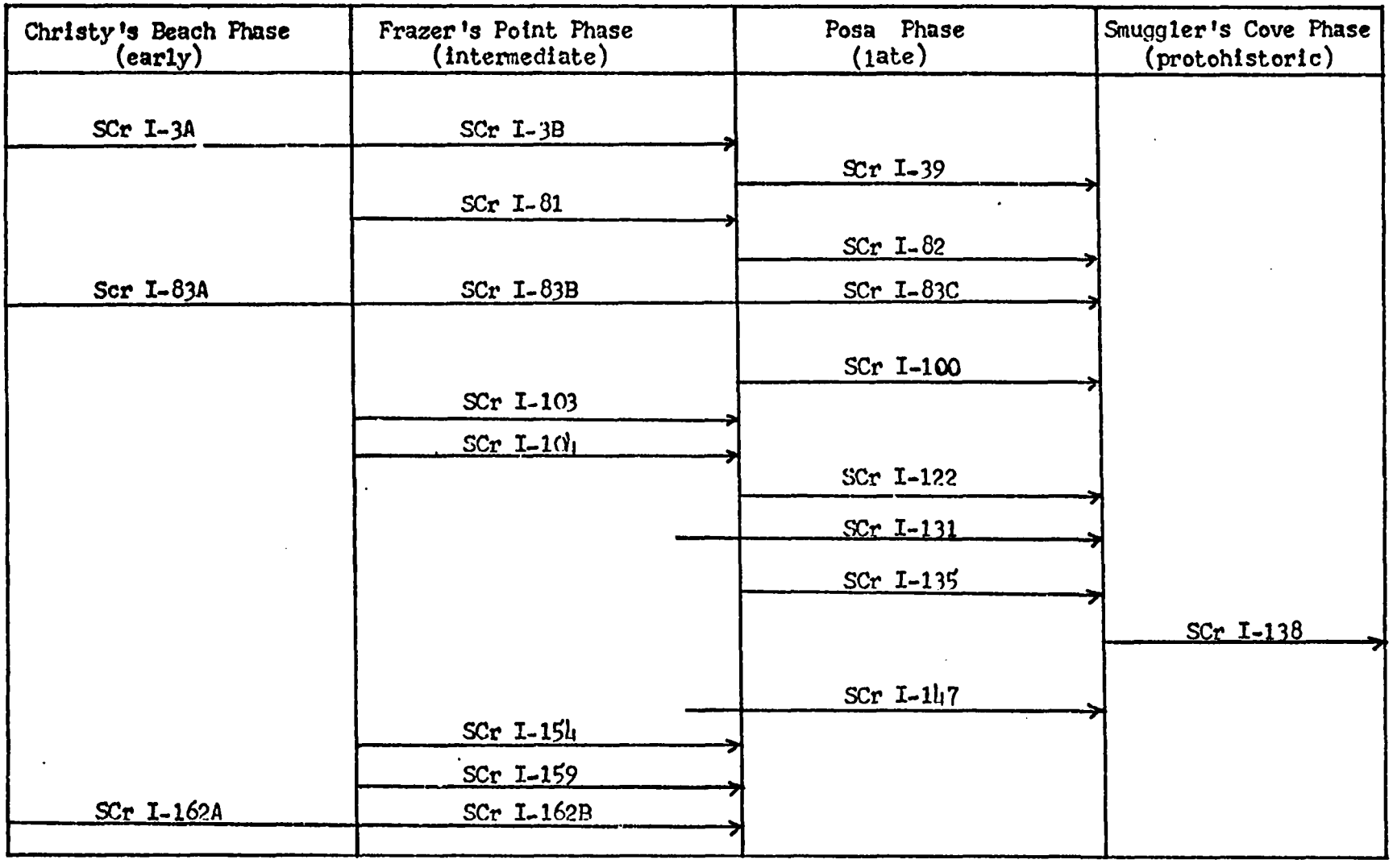
Table 144
Santa Cruz Island Sequence



or triangular shapes included Types C2, C5, E3f, and F3. Both Haliotis rufescens and H. cracherodii were utilized for ornaments and containers, but the latter species was slightly more common. Mortars and pestles were present but rare. Basket pebbles were used for indirect boiling. The population also manufactured twined and wicker basketry. Coiled baskets were probably unknown as no impressions of them have been found as indicated by the scarcity of bone awls. Bone gorges, pendants, and artifacts of Types CC2, CC4, D6 and QQ1 were present. Notably absent from this early of Christy's Beach Phase assemblage are steatite ollas, comals, circular shell fishhooks, milling stones, and mullers. Asphaltum and Type 1a steatite beads were rarely found.

An Intermediate or Frazer's Point Phase is represented in the upper part of Sites 3 and 162, the intermediate level of Site 83, and in the single components of Sites 103, 104, 154 and 159. Burials consisted of supine or side flexures oriented in various directions, but usually to the south or east. The use of powdered ocher in graves declined. Chipped stone artifacts of this phase included projectile points of Types 1b, 1c, 5e, 6a, and 6b, drills of Types 1 and 2, and numerous flake scrapers. Steatite was widely utilized for Type 1a, 2a, and 5 beads, ornaments, pipes of Types 1 and 2, and bowls. Types 1a and 8a mortars were present, but rare, but Types 1a and 2 pestles were more common. Doughnut stones were present.

Those shell bead types continuing from the previous phase included Types 1f, 1j, 4a, 6a, 10a, 10b, 23a, and 25a. Types 18a, 23b, and 25b appeared. Haliotis ornament types included C1a, C5, C5g, E3f,

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F3, and 03g. Both H. rufescens and H. cracherodii shells were used for ornaments and containers, but the latter continued to be preferred. The bone industry became a more important part of the total assemblage and included Type EE1a and EE1b beads, Types B3, B6, and P1 daggers, Types A1aIII and A1d awls, bone gorges, and composite fishhook barbs. There was an elaborate art in punctate bone and clam shell. Both twined and coiled basketry can be inferred from asphaltum impressions and the relative abundance of bone awls.

The late prehistoric or Posa Phase is represented in the single component Sites 39, 82, 100, 122, 131, 135, and 147 in the upper part of Site 83. Burials were prone flexures oriented between north and west. Little powdered ocher was found in graves. Diagnostic projectile point types included 2a, 2b, and 4b. Types 1b, 1c, 5a, 5e, and 6c were also present. All types of drills were present, but Type 1 remained more common. Flake scrapers were numerous. Objects of steatite included a wide variety of beads, all pipe types, many ornaments, and bowls. Mortar and pestle types increased in variety. Pestle types 1a, 1b1, a, 4a, and 4b and mortar Types 1a, 7a, and 8a were especially common. Doughnut stones and asphalted pebbles continued to be utilized.

Shell bead types included the continuation of Types 1f, 1j, and 10c. Types 1a, 1c, 2a, 2d, 3b, 3c, 3f, 3g, 3i, 5a, 5d, 7a, 8, 11a, 11b, 14, 15a, 15b, 16a, 18b, 19a, 21a, and 21b were present. Haliotis ornaments included Types C1, C1a, C1j, E1, E4, ring-shaped (Class G), irregular (Class I), rims (Class M), trapezoidal (Class N), 04, and P1. All types of shell fishhooks and abalone containers were present.

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H. cracherodii remained the most popular species. The bone industry included beads of Types CC5, EE1b and EE1c. Bone gorges and hooks of all types, whistles, Type A4aI awls, C5 flakers, and cetacean bone chisels and wedges were present. Planks from canoes, twined and coiled baskets, and twined matting were also made. The late prehistoric population made widespread use of asphaltum.

The protohistoric terminus of the cultural sequence is firmly established at Site 138, where glass beads and metal objects of European manufacture were present. This Smuggler's Cove Phase was very similar to the preceding Posa Phase in its aboriginal cultural content. Prone burials continued to be flexed to the northwest. Shell bead Types 1a, 1f, 3c, 3f, 3g, 5a, 10a, 11a, 11b, 19a, 21a, and 21b were still produced. Types unique to protohistoric times included 1h, 3a, 3d, 3e, 4b, 11c, 16b, and 16c. Haliotis ornaments include many specimens of Classes E, H, I, J, M, and O. Types H6, H6d, Id, I1a, I1d, I2d, I3d, I4d, I7ad, I8, I9d, I10d, I11a, J1d, J2a, J2d, M1d, M4, M4a, M4d, Od, O2a, O2d, and O11d appear to be unique to the protohistoric period.

Regional Comparisons

Orr's (1968) Post-Pleistocene sequence for Santa Rosa Island can be typologically correlated with the Santa Cruz Island Phases. Spatial, environmental, and morphological factors are closely related.

The Early Dune Culture has been securely dated by the radiocarbon technique between 5,500 and 4,800 B.C. It was characterized by burials in sitting position with large amounts of powdered ocher. Shell beads of Types 1f, 1j, 4a, 10a, 10b, 18a, 23b, and 26a were present. Haliotis

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ornaments were primarily of round or oval shape, and some specimens had serrated edges. Twined basketry impressions were present. There were few bone artifacts, mortars, pestles, or milling stones. Orr's Early Dune Culture satisfied all of the criteria for the Christy's Beach Phase, with the exception of burial posture. Christy's Beach burials were primarily extended, though there are six sitting burials recorded from Site 3 between 18 and 39 in. It is possible that a sitting position is not a diagnostic trait.

The Highland Culture, 4,000-2,000 B.C., was characterized by burials flexed equally in prone or supine position. Orr (1968, 100) admits the absence of any diagnostic artifacts for this culture and only suggests that the population inhabited interior sites exclusively. The absence of horizon markers, the mixed burial pattern, and the unlikelihood of a population living exclusively on the meager vegetable resources of Santa Rosa Island lead one to suspect the actual existence of this culture. Since it occupies an intermediate position in time between Early and Late Dune Dweller Cultures, one might assign some of it to both of those cultures, especially on the basis of burial posture.

Orr's Late Dune Dweller or Black bottom Phase, with radiocarbon dates of 2,000-1,400 B.C., was characterized by burials flexed on one side, circular and oval abalone ornaments, and shell beads of Types 1f and 1j. There was an increased use of steatite and bone for artifacts. Deer bone whistles and beads appeared. Some bone and clam shell ornaments were decorated with elaborate punctate designs. The Blackbottom Phase corresponds to the Frazer's Point Phase of

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Santa Cruz Island, where burials were flexed both on one side and in supine position. The punctate bone and shell decoration was present both in Site 3 and Site 83.

Orr's Canalino Culture, 1,000 B.C. to 1542 A.D., corresponds to the Posa Phase of Santa Cruz Island. A relatively dense population lived in large coastal villages and buried their dead in well-defined cemeteries. Burials were flexed in prone position and were oriented to the northwest. Graves were marked with stone slabs or wooden planks and contained abundant offerings. The marine environment was exploited intensively. Type 3 and 4b projectile points and many Type 1 drills were present on both islands. A wide variety of steatite and flourite beads and shell bead Types 1j, 3g, 4a, 4b, 10a, and 19a were present. Haliotis ornaments were present in the widest variation of types. Bone beads of Types CC5 and EE1a, shark vertebrae spools, and bone gorges were numerous.

Owen (1964a; 1964b) excavated a burial and midden site of the Milling Stone Horizon at Glen Annie, on the mainland adjacent to Santa Cruz Island. Many artifacts corresponded to Rogers' classic description of the Oak Grove Culture. Most burials were flexed in prone position, but a few extended individuals were recovered from the lowest levels of the site. Powdered red ocher and asphaltum were commonly used. A variety of unspecified projectile points, flake knives, and drills of chert and polished serpentine were found. Radiocarbon dates place the site in the 5,270-4,380 B.C. time range. The population utilized land and sea mammals, fish,

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birds, and deer in their diet. Despite the concentrations of milling stones in cairns over graves, their scarcity in the midden indicates that vegetable foods were not the primary source of food. Owen concludes that the Glen Annie site was the camp of semi-nomadic hunters and gatherers. Curtis (1965) proposes a sedentary occupation of the site. Similarities between the Glen Annie assemblage and the Christy's Beach Phase include a maritime economy and the use of powdered ocher. Burial customs are notably different. The higher frequency of milling stones and land mammals at Glen Annie may simply be a reflection of the availability of local resources.

Harrison's mainland sequence is more difficult to correlate with the Santa Cruz Island phases. The El Capitán Phase, 3,500-2,900 B.C., was characterized by extended burials and the presence of rare mortars, pestles, and stone bowls, all of which are also features of the Christy's Beach Phase. The virtual absence of milling stones and clam debris on the island was probably the result of differences in the availability of specific resources.

The Extranos Phase, beginning about 2,900 B.C. and continuing for an unknown period of time, included fully-flexed supine burials, an increasing dependence on sea mammals and fish, and Type 8a and 8b side-notched projectile points. The lack of a shell industry on the mainland may again be due to ecological differences. Typologically, the Frazer's Point Phase most closely resembles the Extranos.

Both the Del Mar and Rincon Phases, pre-1450 B.C., were characterized by flexed prone burials, the use of asphaltum for hafting

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and for hopper mortars, and large shell beads. All of these features were also characteristic of the Posa Phase.

Complete cultural trait correspondances between mainland and island sites do not exist, and are probably simply the results of local ecological differences. When discrepancies in trait correspondences do occur I have given more emphasis to burial practices rather than artifact assemblages. Religious practices tend to be more conservative and less subject to change than technology.

A comparison of Olson's island collection with other assemblages in the Santa Barbara Channel region seems to confirm Meighan's (1959b, 383) hypothesis that the prehistoric sequence in southern California was of the continuous development of a single society, with major changes resulting from ecological adaptations. Thus, the temporal sequence simply represents increasing efficiency in exploiting the local environment.

Other California Comparisons

As might be expected, the closest cultural relationships with the Santa Barbara Channel region are apparent in immediately adjacent areas. The cultures of south coastal California exhibited similarities with Channel cultures since the Early Horizon. The Topanga Culture (Treganza and Bierman 1958) of Los Angeles County contained an earlier phase, represented at LAn-1, with prone extended burials oriented to the south, large crude percussion-flaked points, many heavy basalt core tools, scraper planes, and a predominance of milling stones and mullers. Cog stones and crescentic

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stone objects were also present. Both burial customs and artifacts assemblages demonstrate strong similarities with Rogers' Oak Grove Culture and Harrison's El Capitán Phase.

The later phase of the Topanga Culture, represented at LAn-2, contained supine flexed burials of varying orientation and smaller more varied pressure-flaked projectile points. Mortars and pestles appeared, but mullers and milling stones declined in frequency. Topanga Phase 2 may be related to Harrison's Extraños Phase and the Fraper's Point Phase of Santa Cruz Island on the basis of both burial type and artifact assemblage.

The Buena Vista sites of the southern San Joaquin Valley consisted of two lakeside villages, Sites 1 and 2, and three nearby cemeteries, Sites 3 to 5, which were excavated in 1934 (Wedel 1941). Both village sites were probably contemporary for part of their existence, but Site 1 was occupied into a later period. Two phases of cultural development were noted. The early phase at Site 2 was characterized by extended lime-encrusted burials in compacted and unstratified midden and a high frequency of milling stones and grinding slabs. Both burial customs and artifact frequencies resemble those of the El Capitán Phase of the Oak Grove Culture.

An intermediate cultural phase at Buena Vista was represented in Sites 2, 4, and 5 by flexed burials on the right side or supine with varying orientation, foliate and stemmed points, crescentic "flints", fish vertebra beads, and half-shell Olivella beads. A late phase from Sites 1 and 3 included supine burials of varying

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orientation, bone awls, tubes, and whistles, antler flakers, limpet rings, baked clay objects, a wide variety of steatite beads, and the use of asphaltum.

The early phase at Buena Vista corresponds in several ways to the El Capitan Phase of the Channel mainland and to Olson's Early Mainland Phase. The predominance of milling stones with extended burials occurs in both areas. However, mortars, pestles, charmstones, steatite objects, and the use of asphaltum were present in the Santa Barbara sequence at that time and were absent during the early phase at Buena Vista.

Both intermediate and late phases at Buena Vista show a high degree of correspondence with the Extranos, Intermediate Mainland, and Early Island Phases of the Channel region. The use of steatite, half-shell Olivella beads, clam and Olivella disk beads, abalone and limpet rings, clam ornaments, a complex bone industry, and burial habits were traits shared by both regions.

Correspondences with the cultures of the Sacramento Valley and San Francisco Bay regions are less clear. A tripartite sequence for the lower Sacramento Valley has been thoroughly summarized by Lillard, Heizer, and Fenenga (1939), Heizer and Fenenga (1939), and Beardsley (1954). The Windmiller Facies of the Early Horizon was characterized by prone extended burials oriented to the west, Olivella spire lopped beads, circular Haliotis ornaments with one or two central perforations and edge incision, rectangular Olivella bead inlay, the use of powdered ocher in graves, slate pendants, obsidian tinklers, phallic and

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spindle shaped charmstones with biconically drilled perforations, and quartz crystals. Milling stones and mullers were present but were not as common as in southern California. Large heavy projectile points with rounded bases or contracting stems were probably used in conjunction with the atlatl. Twined basketry was present, but coiled baskets were probably unknown. Burial habit, the use of ocher, and certain bead and ornament types are shared with the Christy's Beach Phase. Central California sites seem to have contained a larger and more varied bone industry during the Early Horizon, but milling stones and mullers were more common in southern California. The Windmiller Facies has been placed within a time range of 2,500-1500 B.C. (Heizer 1949).

The Middle Horizon (1500 B.C.-100 A.D.) in Central California corresponds in time to the Early Canalino Culture or Poca Phase in the Channel region. Typologically, the southern California assemblages are more varied and complex. In Central California, there was a clear dichotomy between coastal and interior cultures. The interior culture was characterized by flexed burials, usually on the side or back with variable orientation. Olivella saddle and large saucer beads, round or rectangular Haliotis beads, and slate projectile points were horizon markers. Circular and oval Haliotis ornaments with one central perforation were often serrated and became larger. Bird bone beads and mica ornaments were present. Typologically, the Middle Horizon of Central California corresponds most closely with the Frazer's Point Phase.

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The cultural relationships between the Santa Barbara region and San Francisco Bay during the Early Horizon are unclear. The Bay Area may have been an impoverished extension of the Windmiller Facies or may represent a distinctive contemporary culture (Gerow 1968).

During the Middle Horizon, supine flexed burials were oriented in various directions. Powdered ocher was common. The use of large unstemmed projectile points, emphasis on bone objects, and variable position and orientation of burials were features shared with the Frazer's Point Phase of Santa Cruz Island. Olivella half-shell, rectangular, and tiny disk beads were present.

During the Late Horizon, burials continued to be flexed, though cremation was introduced from the east. The decline of the use of ocher, continuation of rectangular and spire-ground Olivella beads, and an elaboration of Haliotis ornaments were characteristic features of that period. Small obsidian points, flanged steatite pipes, and bone beads with constricted waists were present. The period corresponds typologically to the Posa Phase in burial customs, projectile points, and some bead and ornament types.

Based on the archaeolgocial material from Olson's Santa Cruz Island sites and other subsequent research on the mainland, I agree with Meighan's (1959a) concept of the continuous development of a single society for coastal Southern California. Early arrivals on the coast were probably Hokan speakers from the interior. Rogers' cultural classification and the more precise phases of development proposed by subsequent researchers may be viewed as a progressive

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but gradual change in the economy and technology to permit a more efficient exploitation of the local environment. In the Santa Barbara region, this progression is reflected in the greater use of marine resources with time.

Mainland groups were already utilizing the tidal environment between 5,000 and 4,000 B.C. The apparent overlap in time of Oak Grove and Hunting sites (Harrison 1966, 63) may simply be the result of the same group depositing two quite different kinds of site debris as they exploited plant and marine resources at different seasons of the year (Landberg 1965, 119-33). The plant and land animal resources of the Channel Islands were scarce. Presumably, the substantial occupation of the islands occurred only after the local population had learned to exploit the marine resources and construct boats on the mainland. The coastal sites which Olson excavated represent large permanent settlements at the mouths of major streams which were inhabited by a boat-using, marine-adapted culture from the Christy's Beach Phase through protohistoric times.

The Santa Cruz Island sequence provides archaeological evidence of progressive maritime ecological adaptation. The earliest inhabitants of the mainland, probably Hokan-speakers of the Desert Tradition, learned to exploit the local marine resources before settling Santa Cruz Island. On the island, shellfish were utilized extensively as early as the Christy's Beach Phase. Sea mammals were exploited intensively by the Frazer's Point Phase and the final Posa Phase represented the large-scale utilization of fish with the appearance of circular and composite hooks and nets. By the Posa Phase, the

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population was primarily dependent on the sea for year round subsistence. The relative abundance of sea foods and raw materials permitted the support of large permanent settlements, an elaborate technology, and complex ceremonial practices. Thus, progressive adaptation to a favorable environment resulted in the high level of cultural development which the Spanish discovered among the Chumash in the sixteenth century.

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